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Systematic evaluation of wildland scenery and recreation potential: Rock Creek Pilot Study southeast of Missoula Montana

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CHAPTER I

INTRODUCTION

Major Proposition of the Thesis

The present emphasis on land use planning within Federal land management agencies is creating the need for a comprehensive evaluation of all resources. Ideally this evaluation should begin at as broad a scale as possible so that as plans get more finite, the benefit of the overview provides direction. However, within the Northern Region of the U.S. Forest Service, the present direction for planning is not hierarchical. National Forests within the Northern Region are following the guidance of the Regional headquarters as set forth in the "Guidelines for Development of Unit Plans" (U.S. Forest Service 1972[A]). These guidelines were created in response to the Environmental Policy Act of 1969 which directed all Federal agencies to utilize ecological information, through

interdisciplinary teams, in the planning and development of resource-oriented projects on Federal lands. Unfortunately, none of the people responsible for preparing the guides had any training in planning. As a result, the 14 Forests of the Region are undertaking a major planning effort, a unit at a time, without the benefit of a Regional plan or similar overview perspective. For example, the 2.8 million acre Lolo National Forest is presently subdivided into 38 planning units averaging 80,000 acres in size. Each of these units will be planned over a four-year period from which individual management guidance plans will be developed. It is anticipated that when the planning is complete, these units will fit together like the pieces of a puzzle into a logical, Forest-wide management plan.

The folly of this approach began to become evident during the public meetings held in conjunction with the units planned during 1972. When members of the public requested information on the relationship between the resources of the unit at hand and the resources on the rest of the Forest or

Region, the data was not available due to the lack of an overview plan.

The concept of hierarchical planning is well established. In the Canadian "Guidelines for Bio-Physical Land Classification" (Lacate, 1969) the following statement is made.

> Discussions at subcommittee meetings have led to the general agreement that a land classification that begins with a broad areal appraisal of land resources and provides a summary of data that sets the stage for more detailed work on those areas that warrant closer attention, is the most reasonable and practical one to pursue in a country as large as Canada.

The Canadians are not alone in recognizing the significance of the systematic approach to land stratification as it relates to planning. Region 4 of the Forest Service has developed a "Land Systems Inventory" (Wertz and Arnold, 1972) based on a hierarchy of land classification applicable in planning from the National level to the site.

The most recent publication by the Forest Service on the subject of land classification and planning has been produced by a task force of personnel from the western States

(U.S. Forest Service, 1973[A]). Entitled "Ecoclass," it represents a refinement of the work of Wertz and Arnold in providing a more detailed land classification system for use in land use planning in the Pacific Northwest.

Unfortunately, the National Forests in Region 1, which include the entire State of Montana, Northern Idaho and the Dakotas, had been well underway with unit planning before the publication of "Ecoclass" (U.S. Forest Service, 1973[A]). Implementing any major changes in planning direction now would be nearly impossible due to the complexity of the scheduling and coordination. The problem, therefore, is how to obtain the benefit of an overview perspective of resources and opportunities while maintaining the current schedule of unit plans.

The author is responsible for inventory and analysis of the scenic and recreation resources of the Lolo National Forest as a member of an interdisciplinary planning team. The lack of an overview of these two resources has severly hampered any

rational decision-making relating to resource use on individual planning units. For example, if a portion of a unit is roadless, and a decision must be made on whether or not it is suitable for development, the area should be placed in perspective with other such available areas. If, in a Regional context, it is outstanding for roadless type recreation it should be known, and, conversely, if the area is more suitable for some other recreational use the trade offs relating to resource allocation can be made more objectively with an overview.

In order to overcome the lack of Regional-scale information relating to scenery and recreation, this thesis has been developed. The purpose is to define a methodology for evaluating broad areas for their scenic quality and recreation potential, using readily available information which can be assembled--in a single field season--by relatively unskilled personnel. The objective is to develop a systematic evaluation procedure which will ultimately place the scenery and recreation potential of the Lolo National Forest in the proper perspective.

An understanding of the significance of these resources in a Forest-wide context will allow for more objective analysis of resource trade offs in the remaining planning units.

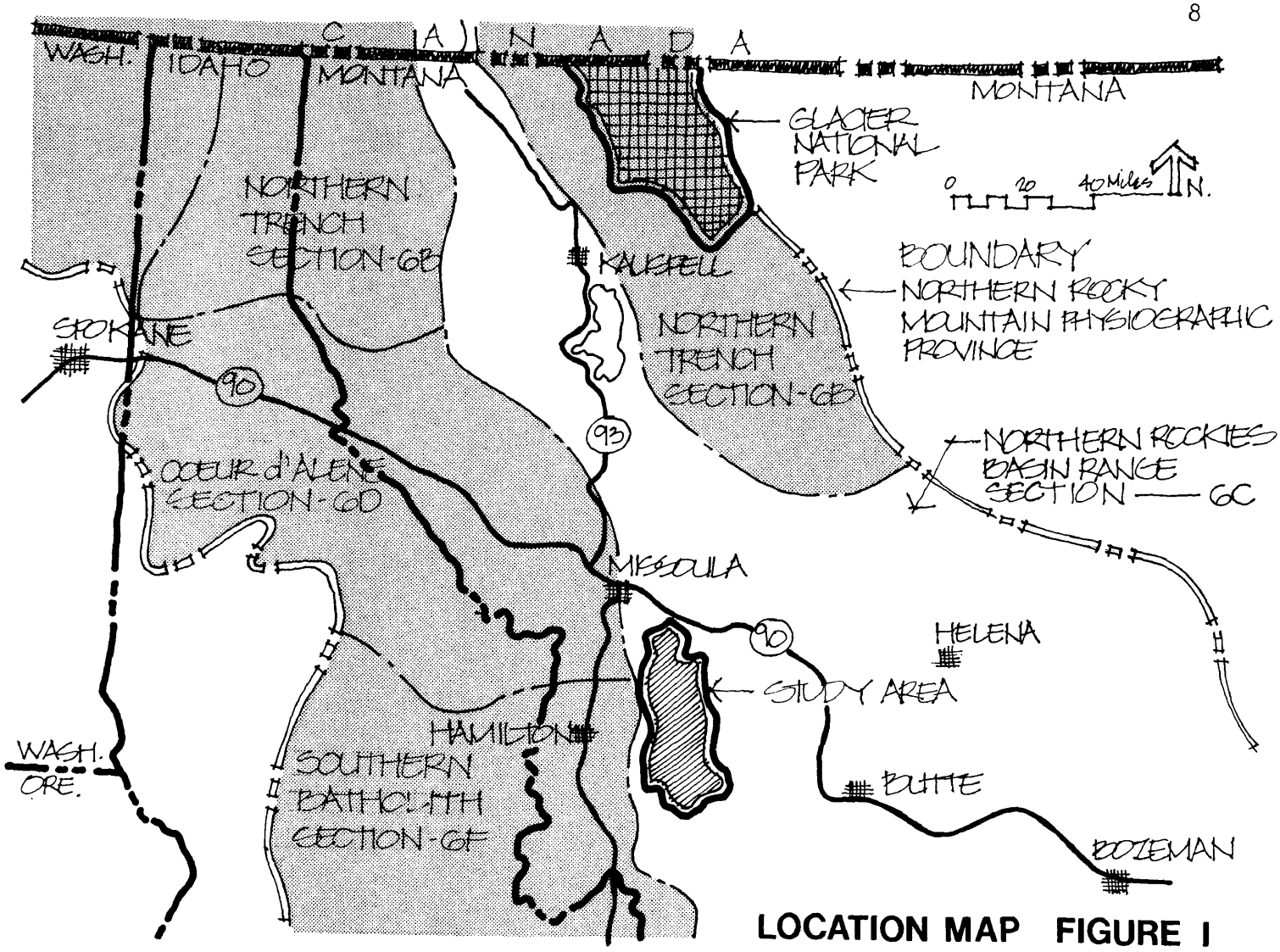
Unfortunately, large scale dispersed recreation analysis is a concept that few researchers have dealt with. Most studies in the literature deal with site evaluation for concentrated use or wilderness and its attendant problems. The Multiple Use Sustained Yield Act of 1960 has directed that National Forest lands be managed to provide a constant supply of tangible resources as well as recreational opportunities. Not all resource development activities are compatible with developed recreation; however, many forms of dispersed recreation such as road-related hunting depend on improved access. Dealing with the spectrum of recreation uses which can occur on National Forest land in such a manner that they can be comprehended is an integral part of the objective of this study. Because of the magnitude of the Lolo National Forest, it is felt that a pilot study area should be established to

test and streamline the process. Therefore, the Rock Creek Watershed (Figure 1) has been selected for two principal reasons: at 570,000 acres it is relatively large and contains a wide variety of landscape types; and there is currently a dispute over allocation of resources in the watershed between various public groups and the Forest Service.

Rock Creek - The Pilot Study Area

Physical Description

The Rock Creek Watershed lies in the central portion of the Northern Rocky Mountains and drains into the Clark Fork of the Columbia River approximately 20 miles southeast of Missoula, Montana (Figure 1). The drainage trends generally south to north beginning at the Continental Divide. It is approximately 54 miles long and averages about 18 miles in width. Elevations vary from 10,456 feet at Warren Peak on the Continental Divide to roughly 3,540 feet where Rock Creek enters the Clark Fork. The climate which reflects the



LOCATION MAP FIGURE 1

mountainous terrain, varies from semi-arid steppe with 18 inches of annual precipitation to alpine tundra with 50 inches of precipitation per year. According to Alden (1953), upper Rock Creek was extensively altered by alpine glaciation which was most advanced during the Wisconsin Stage of the Pleistocene epoch. The area presently drained by the Ross Fork, Middle Fork, and East Fork was inundated by a massive ice sheet which was responsible for creating the outstanding cirque and horn topography appearing today along the Divide. The low rolling hills to the north of the cirque and horn topography are a result of the planing action of the ice field as it overrode them. A smaller alpine glacier existed at the same time along the Sapphire Range on the eastern boundary of the drainage. Evidence of this land-forming agent can be seen south of the Skalkaho Road at Skalkaho Pass.

Principally the bedrock belongs to the belt supergroup consisting of Pre-Cambrian quartzite and argillites of the

Missoula and Ravalli groups (Ross, 1963; Perry, 1962). Igneous intrusives of early Tertiary age can also be found in the Rock Creek drainage, but to a lesser extent than the sedimentaries (Perry, 1962). Alvis (1968) states that the residual soil on the belt rocks is quite stable with low erosion and low mass failure hazards. Soil forming on the granitics, however, is more of a problem in that the granitics have a moderate erosion hazard.

According to Kuchler (1964), the potential vegetation of the major portion of the drainage is Douglas-fir, but more detailed recent surveys by the U.S. Forest Service indicate a variety of habitat types ranging from ponderosa pine and Douglas-fir to subalpine fir and alpine larch. Potential vegetation depends much on elevation, aspect, soil and available moisture.

The lower 55 miles of Rock Creek are classified as a Blue Ribbon Fishing Stream by the State of Montana Department of Fish and Game. This classification is based primarily

upon Rock Creek's productivity for fishing; other considerations are availability, esthetics and use (Brown et al., 1959). Only six streams in Montana are classed as Blue Ribbon Streams.

A total of 282 miles of fishable streams exist within the drainage according to a report by the U.S. Forest Service (undated). Other resource values which apply only to the year 1969 are: recreation use of 159,600 visitor days per year, an estimated timber allowable cut of 30 million board feet per year, 45,565 acres of livestock range, and 24,000 acres of key big-game winter range. The same report indicates that of the 569,535 acres within the Rock Creek Watershed, 457,800 are National Forest lands, 12,520 are Bureau of Land Management, 4,890 are State of Montana, with 94,325 acres in private ownership.

The Controversy

Management of the resources within the drainage, particularly the water quality of Rock Creek itself, is presently a subject of much disagreement. The history of

the controversy can be traced back to the preparation of the 1967 Multiple Use Plan (U.S. Forest Service, 1967) for the Lower Rock Creek Drainage. According to Reimers (1973), the plan was prepared with very limited public participation and the decisions represent the prejudices of the Forest Service administrators.

In 1968, Lolo National Forest planners began development of a Coordinated Resource Management Plan. This was an approach used in the Northern Region during the late 1960's in which the very general existing Multiple Use Plans were expanded into comprehensive, detailed plans. Reimers states that such efforts were undertaken only when significant controversy over resource development was anticipated. The 1968 plan was also developed without public involvement, but it represented a more detailed statement of management planning for Rock Creek than any previous document. It emphasized recreation, timber, water quality, and the Blue Ribbon fishing (Lolo National Forest, 1969). At that time,

however, no systematic procedure was utilized in evaluating land capability to support the proposed uses.

Early in 1969, the Lolo Forest Supervisor and the District Ranger decided not to finalize the Coordinated Resource Management Plan until the public was given the opportunity to respond to the resource information and management alternatives. However, Ranger District consolidation and other organizational changes inaugurated in 1969 delayed a major public involvement program until 1970.

According to Reimers, a presentation to the Missoula Chapters of Trout Unlimited and the Sierra Club on February 2, 1970 launched the public involvement program. At this meeting, a feeling of unrest over the proposed management direction began to develop among certain segments of the public, including Missoulian reporter Dale Burk. In a follow-up article on the meeting, Burk (1970) related to the values of the Blue Ribbon Stream, the potential impacts from timber harvest, 17 proposed recreation sites and private land

development.

The response by the public to the first meeting and the follow-up article by Burk was the beginning of a major controversy. Reimers states that the controversy resulted in letters to the Forest Service and the Congressional Delegation, petitions for and against a moratorium on timber harvest and a polarization of interest groups. Subsequent meetings and newspaper articles produced heavy correspondence on the subject of moratorium in April, May and June 1970.

A two-day field trip was scheduled by Forest Service administrators in August 1970, which was viewed as the wrap-up of the public presentations, news coverage and letters of comment. Press coverage was positive and the Government officials considered the session as the culmination of public involvement.

The final formulation of a management plan for Rock Creek was prepared between September 1970 and May 1971 (U.S. Forest Service, 1971[A]). It involved personnel from the

Lolo and Deerlodge National Forests as well as Regional Office personnel. The expansion of the planning area from Lower Rock Creek to include the entire drainage was in response to public sentiment expressed during the public involvement stage.

The plan, set forth as coordinating requirements, specified water quality and quantity as key resource values in the Rock Creek Drainage. Specific management direction was established for the major areas within the drainage such as the Anaconda Pintlar Wilderness and the Rock Creek Canyon area. These coordinating requirements were to serve as guidance for management until detailed unit plans could be prepared which would be based upon finite analysis of land capability as directed by the National Environmental Policy Act of 1969.

In June 1973, the Regional Forester directed that the Supervisors of the Lolo and Deerlodge National Forests establish an advisory committee of interested citizens for Rock Creek.

The committee, composed of a cross section of interest groups, was established as an aid to planners and administrators in the analysis of complex resource questions. This committee has been meeting for over a year, to date, and almost from the beginning has been opposed to subdividing Rock Creek into separate planning units. Currently there are four discreet units proposed for the drainage, to be planned over a 3-year period. The committee would prefer to plan the drainage as a whole so that the perspective of the entire resource would not be lost in the unit plans. However, the Supervisors of the Lolo and Deerlodge National Forests have other priorities and cannot devote the necessary manpower to Rock Creek as a single planning unit.

It is hoped, therefore, that this overview analysis of scenery and recreation in the Rock Creek Drainage will be of benefit to the committee in assessing resource trade offs in the unit plans.

The Recreation Typology

Almost all National Forest land is suitable for some form of recreation. However, because little has been done in determining Regional-scale dispersed recreation opportunities some method must be established to evaluate them.

Federal and State-owned lands, particularly in the West, are unique in their ability to support dispersed or unstructured recreation activities, but because they are difficult to identify, few management plans give consideration to these values.

Potential activities on large forested landholdings are limited only by the imaginations of those who seek an out-of-door experience. Dealing with such abstract information requires a different approach than is commonly used in evaluating recreation potential. Hendee, et al., (1971) studied activity preferences of outdoor recreationists and were able to develop a typology of conceptually linked groups.

Whereas most recreation activity studies deal with

observed behavior, Hendee relates to the stated preferences of over 2,000 people. The sample was taken among recreationists visiting both car campgrounds and wilderness areas in the National Parks and National Forests of western Washington. Although the conclusions are not definitive and more study on activity preferences is needed, the concept of linking activity groups has merit in simplifying large scale recreation evaluation procedures. The five activity groups making up the typology are as follows:

Appreciative Symbolic

Activities are directed toward appreciation of features of the natural environment. The recreationist's focus is on appreciation of material items of the environment rather than on their extraction in the form of trophies. Preservation of the natural state is necessary for maximum enjoyment of most activities included in this category. A representative list of activities on the Lolo National Forest includes:

- Viewing scenery (on foot or horseback)

- Climbing (mountain, rock)
- Ski touring - snowshoeing
- Nature photography
- Backpack camping
- Hiking
- Observing wildlife

Extractive Symbolic

Activities characterized by the quest for trophies extracted from the natural environment. Preservation of the environment in a natural state is not mandatory but does affect the quality level of the experience.

Representative activities include:

- Fishing
- Hunting
- Trapping
- Flora gathering (mushrooms, berries)
- Rock collecting

Sociable Learning

Clearly social activities such as visiting, inspecting equipment around camp and singing, as well as learning activities such as nature study, hearing nature talks and visiting exhibits. Both types involve intentional social interaction. It is assumed that the social interaction involved, rather than the specific content of the activities, is the primary source of satisfaction.

Representative activities include:

- Camping in developed sites
- Picnicking
- Hearing nature talks
- Visiting exhibits
- Resort vacationing

Passive Free Play

Activities requiring little effort in gaining satisfaction. The recreationist's focus is on relaxing in a change of pace

atmosphere. Modification of the forest environment to provide comfort and/or convenience facilities such as good roads, developed campgroups, beaches, and trails is usually desirable for most of the activities in this category.

Representative activities include:

- Driving and sightseeing
- Walking
- Roadside camping and picnicking
- Quiet boating (rowboats, canoes)

Active Expressive

Activities which tend to express individual abilities and frequently involve motorized equipment. The recreationist's focus is on the activity, and the forest environment is secondary. Modification of the forest environment is permissible to the extent that the ability to engage in most of the activities included in this category is not curtailed.

Representative activities include:

- Downhill skiing

- Snowmobiling
- Trailbiking
- Power boating
- Water skiing
- Four-wheel driving

No clearly defined boundary exists between any two categories in the typology and some activities may overlap, but it does appear that there is validity in the activity groups as defined. This study has been undertaken with the assumption that all conceivable Forest-related recreation activities can be categorized into at least one of Hendee's recreation types. A similar study in another geographic region would need to explore whole new groups of activities, since differing landforms and climates would create entirely different recreation opportunities.

The Concept: An Overview

Since all activities of man must be tied to the land, it is imperative that the components of the land such as

landforms, slope and vegetation, which present constraints on use be identified and analyzed. In this study these components are viewed as determining land capability, that is, the relative ability of an area to support the various types of recreation defined in the recreation typology.

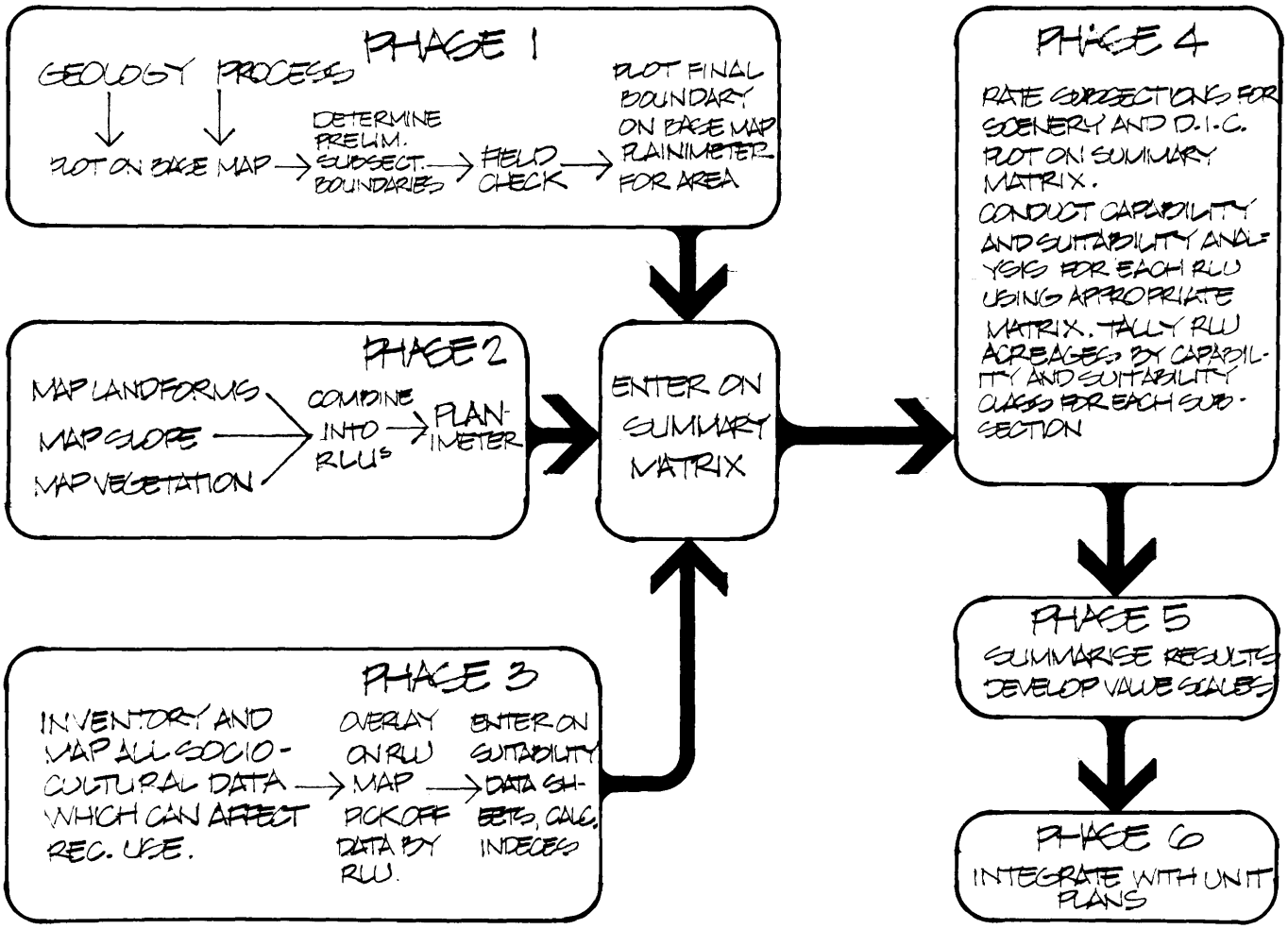
Land suitability differs from capability in that the developments of man on the land and those things regarded as unique such as botanical areas in land suitability are given consideration. Since the activity groups in the typology relate to the relative naturalness of the landscape, the inventory and analysis of cultural data are essential. Several landscape types, which will be referred to as subsections, exist in Rock Creek; the capability and suitability of each to support different kinds of recreation will vary according to constraints and opportunities. Once these are identified and analyzed, a scale of relative values can be established for each subsection as it is able to support the various recreation activity groups. The value scale will be

most beneficial in determining trade offs between recreation and other resource uses.

For the purpose of identifying the scenic resource and recreation potential of Rock Creek, this study has been subdivided into six phases (Figure 2 - Analysis Process Flow Diagram). Phases 1 and 2 deal with assembling and quantifying physical data. Phase 3 deals with assembling and quantifying cultural and unique natural data. Phase 4 involves analyzing and summarizing the data by capability and suitability classes for each subsection. Phase 5 entails analyzing the data and developing value scales. Phase 6 which lies beyond the scope of this paper is the synthesis of this functional data with other resource activities in the development of management plans.

Phase 1. Subsection Delineation

In keeping with the hierarchical approach to planning, the first step is to view the study area in as large a context as possible. In Ecoclass, the starting point is the



FLOW DIAGRAM FIGURE 2

physiographic province, as defined by Thornbury (1965), which is subdivided into seven sections. A section is defined as "a specific land area with characteristic topographic, geologic and hydrologic properties. . . ." Sections, however, are too broad for the purposes of this study; thus, it will focus on the next subdivision of the section, the subsection, which is recommended for long-term regional resource allocation planning. Subsections are landscapes which have similar geologic history and landforming processes. Identifying them involves assembling all available geologic, physiographic, topographic, and photogrammetric data on the study area. Map overlays and stereoscopic viewing allow for establishment of preliminary subsection boundaries which must be field checked for final determination.

Since subsections represent assemblages of similar landforms, they should rate similarly for scenic quality and recreational capability; this is a fundamental assumption of this study.

Phase 2. Recreational Land Unit (RLU) Delineation

This portion of the study is the most time-consuming. It involves assembling the necessary physical components of the land which are viewed as being significant to determining land capability. The components used are landform, slope and structure of vegetation. Overlaying these three components yields a single map of recreational land units, each of which is homogeneous in terms of landform, slope and vegetation. Each Recreational Land Unit is planimetered for area and entered on the proper summary matrix sheet (Appendix A) by subsection.

Phase 3. Suitability Data Collection

All available information on roads, trails, developed sites, archeologic and historic sties, areas of unique vegetation, etc., are inventoried and plotted on overlays to be used in conjunction with the Recreational Land Unit maps. Indexes of relative density are calculated for each inventory

item as an indicator of its effect on potential use of each Recreational Land Unit. These density indexes are plotted on the summary matrix sheets and used in Phase 4 to evaluate recreational suitability.

Phase 4. The Analysis

This is the analysis phase which begins with rating the subsections for scenery and development impact capacity according to the criteria on Table 1. Ratings are posted on the summary matrix sheets. Capability and suitability of each Recreational Land Unit is calculated using the appropriate matrix (Figures 12 and 13), and posted in the space at the bottom of the summary matrix. Acreage totals for both capability and suitability classes are summed horizontally by subsection on the summary matrix sheets and the totals are placed in the box in the lower right-hand corner of the first sheet for each subsection. (Some subsections have so many Recreational Land Units that they require several sheets.)

Phase 5. Summary Analysis

This is the summarization phase where the data is assembled, analyzed and evaluated. It places the scenic resource and recreation potential of the study area in perspective by allowing for comparisons between subsections individually and as they relate to the whole, and it resolves conflicts between potential uses.

Phase 6. Integration of Data

Phase 6 lies beyond the scope of this study. It is the integration of the data shown here with other resource data in determining management direction for individual unit plans.

CHAPTER II

SUBSECTIONS: THE UNIT OF ANALYSIS

The subsection is the key to the land classification system being proposed here. It is the smallest unit of land which can be identified using the basic criteria of geologic factors and climate as they are expressed on the land over time (U.S. Forest Service, 1973[A]). Subsections represent distinct assemblages of landforms which can be rated for their scenic qualities, their ability to absorb resource development and their ability to support recreation activities.

The Scenery Rating

In his book the Image of the City, Kevin Lynch states:

> At every instant there is more than the eye can see, more than the ear can hear, a setting or a view

> waiting to be explored. Nothing is experienced by itself but always in relation to its surroundings. . . .

The surroundings, therefore, provide the montage within which a scene is experienced and which sets the relative quality level for the observer. Lynch, of course, is dealing with cityscapes, but the principle remains the same in rural landscapes.

Research Planning and Design Associates (1967) developed a quality rating system for landscapes based primarily on landform which was used to evaluate the entire northeastern United States. Landforms were determined to be the fundamental unit of analysis because of their relative permanence in the landscape. Zube (1973) verified that scenic value increases with an increase in relative relief in a study of personal preferences of a diverse group of people in the northeast United States. The landscape description and inventory system developed by Litton (1968) is currently widely used in the Forest Service for quantifying landscapes at the project scale. This system deals with specifics in the landscape such

as seen areas, focal points, vistas and so forth which are critical at the project level if visual quality is to be maintained in the landscape.

Resource planners in the Forest Service need an operational visual quality rating system for Regional-scale landscapes similar to what Research Planning and Design Associates have developed. This would allow for identification of the landscapes in a Region according to visual appeal and would aid in identifying the most suitable areas for recreation use.

Region 1 of the Forest Service has adopted scenery rating criteria developed by Rai Beinhert of the Beaverhead National Forest for use in the Northern Rocky Mountain Area (U.S. Forest Service, 1973[B]). This system was designed for rating recreation settings in mountainous areas which frequently conform to second or third order watersheds, but it appears to be applicable to large scale areas such as the subsection (Table 1). The ratings are based upon five principal criteria: basic

terrain variety, geologic features variety, water features variety, vegetative pattern variety and land use effects. Each of these criteria contains a range of predetermined scores to separate the unique areas from the mundane. The numerical range is highest for basic terrain variety which reflects the findings of Zube (1973).

The scoring for the remaining criteria was based upon available data in the literature in studies by Litton (1968), Shaefer, et al. (1969), and Craik (1970). The system was tested initially using personnel on the Beaverhead National Forest. It was subsequently tested by the Landscape Architects of Region 1 at a meeting in Missoula during March of 1973. Only minor changes were instituted in the criteria as a result of these evaluations.

During the summer of 1973 the entire Lolo National Forest was rated according to this criteria. Three people from diverse backgrounds conducted the analysis: a graduate forester, a geography student and a graduate student in

TABLE 1

Scenery and Development Impact Capacity (DIC)
Rating Criteria

No.	Criteria	Scenery Rating	DIC Rating
1.	BASIC TERRAIN VARIETY		
a.	Subsection characterized by highly varied terrain, dramatic slope gradient and relief differences typical. The area is dominated by massive angular forms, sharp edge definitions, strong visual contrast.	24 22 20	6 8 12
b.	Subsection contains moderately varied terrain, dominated by fairly massive, rounded forms, moderate edge definition, moderate visual contrast.	16 14 12	14 16 20
c.	Subsection characterized by uniform terrain, predominantly gently sloping forms, subtle edge definitions, weak visual contrast.	8 6	22 24
2.	GEOLOGIC FEATURES VARIETY		
a.	Subsection characterized by numerous and/or highly significant geologic		

No.	Criteria	Scenery Rating	DIC Rating
	features (eg., high cliffs, massive rock formations, craggy peaks and/or ridges, chasms, gorges); major figure objects which tend to dominate other objects in the visual field.	14 12	
b.	Subsections characterized by moderately significant geologic features (minor cliffs and rock formations are typical examples); these figure objects tend toward co-dominance with other objects in the visual field.	10 8	
c.	Subsection characterized by minor, or no geologic features; when present minor features are usually subordinate to other objects of the visual field.	4 2	
3.	WATER FEATURES VARIETY		
a.	Subsection characterized by a generous distribution of significant water features. (Lakes, marshes, rivers, large streams, waterfalls, snowfields are typical examples.) These feature objects tend to dominate other objects of the visual field.	18 16 14	

No.	Criteria	Scenery Rating	DIC Rating
b.	Subsection characterized by moderately significant water features (small isolated lakes and/or marshes, moderate sized streams, small waterfalls are typical examples). These figure objects tend toward co-dominance with other objects of the visual fields.	12 10 8 6	
c.	Subsection characterized by minor or no water features (eg., minor or intermittent streams, small marshy areas, etc.); these features, when present, are usually subordinate to other objects of the visual field.	4 2	
4.	VEGETATIVE PATTERN VARIETY		
a.	Subsection characterized by contrasting vegetative pattern and texture expressed through varied structural types. Variety of vegetative communities creates contrasting forms and color in the landscape. Forest openings and/or patches are major figure objects which may dominate or be co-dominant with other objects of the visual field.	12 10	12 10

No.	Criteria	Scenery Rating	DIC Rating
b.	Subsection characterized by moderately varied vegetative pattern and texture (presence of few vegetative communities and structural type typical); minor changes of form and color are evident. Natural forest openings or isolated forest patches are not distinct due to subtle edge definition; forest openings and/or patches tend toward co-dominance or subordination with other objects of the visual field.	8 6	8 6
c.	Subsection characterized by uniform pattern of vegetation (presence of only one type of plant community typical), lack of structural variety eliminates textural variations. Vegetative cover tends to be ground in relation to other objects of the visual field.	4 2	4 2
5.	LAND USE EFFECTS		
a.	Subsection characterized by cultural effects which enhance the stimulus potential of the visual field. Well kept meadows and pastures with grazing		

No.	Criteria	Scenery Rating	DIC Rating
	cattle are typical. Structures including fences, barns and houses are in harmony with their surroundings and reflect the historic development of the area.	8 6 4 2	0 0 0 0
b.	Subsection characterized by the absence of discordant land use effects; existing land use effects, if discernible are in harmony with the natural objects of the visual field.	0	0
c.	Subsection characterized by the presence of moderately discordant land use effects, these effects tend toward co-dominance with the natural objects of the visual field.	-2 -4	-2 -4
d.	Subsection characterized by the presence of highly discordant land use effects; these effects tend to dominate the natural objects of the visual field.	-6	-8

landscape architecture. The group worked together for about three days to gain a consensus regarding interpretations of the criteria. Then each person worked independently to rate the Forest by predetermined areas. The correlations in scores were quite close; seldom did any number vary more than one factor plus or minus between ratings. Since this criteria is to be used by all the National Forests of Region 1, it seems appropriate that it be adopted here in the interest of continuity.

The Development Impact Capacity Rating (DIC)

For the purpose of this study, the Development Impact Capacity Rating (DIC) has been added to the Region 1 scenery rating criteria. It is an attempt to identify the inherent capacity of the various landscape types (subsections) to visually absorb resource development such as timber harvest or road construction. Visual absorption techniques were pioneered by Jacobs and Way (1969) who dealt with visual characteristics of urbanizing landscapes. Their hypothesis

was that visual absorption is a function of two things: (1) visual transparency which is defined by the relative density of vegetation and by the amount of topographic closure, and (2) visual complexity which is a function of the number of distinct elements in the visual field. The most absorptive landscapes proved to be those with the densest vegetation, the greatest amount of topographic enclosure and the most complex landscapes. This, of course, is an urban analysis and some of the criteria must change to evaluate western mountain scenery; however, the concept of visual absorption is an important one to analyze since it can be instrumental in maintaining the visual integrity of the landscape.

The hypothesis being proposed here is that landform, vegetative pattern and existing development are the determinants of Development Impact Capacity. Slopes which rise abruptly from the horizontal plane are very visible opposed to flat or rolling terrain in tree cover which disappears from view very quickly. Hillsides that are clothed in a

uniform pattern of vegetation are more susceptible to adverse visual impacts since any modification conflicts with the intrinsic landscape character (U.S. Forest Service, 1971[B], and 1973[C]). Conversely, where structure, pattern and texture of vegetation are diverse, a change of texture (i.e., through timber harvest) which respects the natural pattern should present little adverse visual impact.

Existing manmade modifications which have degraded the land to the point that the natural landscape character is destroyed or nearly so is the third determinant of Development Impact Capacity. Quantifying the visual effect of existing development will aid in determining what further development can be accommodated, if any, without adverse effect.

The Recreation Rating

Rating each subsection for recreation is the synthesis of all data gathered and analyzed in the course of this study.

Basic to the evaluation of recreation potential is the

Recreational Land Unit or RLU. The RLU is a subdivision of the subsection and each RLU is assigned a number within a particular subsection so that it can be identified. RLU's are made up of three components: landform, slope and vegetation. These components were selected because they constitute some of the major physical constraints to recreational land use and are easily obtainable from existing maps and photographs.

Landform constraints result from the variable physical factors inherent in their formation. Some landforms are quite stable and can withstand heavy use while others are extremely susceptible to erosion or slumping and thus should not be considered for certain activities. Slope constraints are readily discernible. The more gentle slopes can support a wide range of uses with a minimum of constraints while steep slopes are very restrictive. Heavily stocked stands of timber, such as those existing in much of the Northern Rocky Mountains, are frequently nearly impenetrable. Therefore, the vegetative

cover is a critical indicator of recreation potential.

A systematic analysis of these three components should yield an acceptably accurate comprehension of the land's capability to support recreation activity groups by RLU. The ratings for all RLU's within each subsection are combined in the final analysis to develop a capability rating for the subsection.

Rating each subsection for suitability also entails first an analysis of each RLU which incorporates the scenery rating and all other pertinent data for the subsection. The sum of individual RLU suitability ratings yields the suitability rating for the subsection. Dealing with individual RLU's in the analysis is beyond the scope of this study. They can, however, be used in Phase 5 for more detailed recreation evaluation.

CHAPTER III

THE STUDY PROCEDURE
(Refer to Flow Diagram - Figure 2)

Phase 1: Subsection Delineation

As was stated previously, the Northern Rocky Mountain Physiographic Province (Thornbury, 1965) has been divided in "Ecoclass" (U.S. Forest Service, 1973[A]) into seven sections according to topographic expression as influenced by structure, process, climate and time. Two of the sections, the Northern Rockies Basin Range and the Coeur d'Alene, encompass the Lolo National Forest. Rock Creek, the pilot study area, falls entirely within the Northern Rockies Basin Range Section. This section is so large, however, that additional data is necessary to give the subsections within it more specific locational identity. To accomplish this, watersheds have

been selected since they are identified on a National network by the U.S. Geological Survey. Each of the major watersheds in the United States has been assigned a number with the principal subwatersheds designated by a letter. The Columbia River Basin is number 76. The letter E has been assigned to Rock Creek (U.S. Geological Survey, 1972). To identify the subsections within the Rock Creek drainage, therefore, a three-part, alpha-numeric symbol is used. For example, 6C-76E-01 indicates the following:

6 - Northern Rockies Physiographic Province
C - Northern Rockies Basin Range Section
76 - Columbia River Watershed
E - Rock Creek
01 - Continental Divide Subsection

The first step in this planning process is to establish subsection boundaries. This requires assembling all available data on topography, geology and physiography as well as aerial photographs of the study area.

The base map used for the Rock Creek study is one prepared by the Lolo National Forest, one inch to the mile

with a 100-foot contour interval. Two principal sources of geology were used, the Geologic map of Montana (Ross, et al., 1955) and the Geologic map of the Lolo National Forest (Morrison, 1973). Physiographic data by Alden (1953) aided in identifying process, and the aerial photographs allowed for final subsection boundary establishment. The procedure was as follows:

First, the geology was broken down into five classes which represented significant management implications, according to the interpretation of the geologic types by Morrison. The classes are:

1. Cambrian Rocks
2. Missoula Group
3. Middle Belt Carbonates
4. Ravalli Group

(2, 3, 4) → Pre-Cambrian Rocks

5. Igneous Rocks

The geologic classes were then plotted to scale on the one-inch to the mile base map. Next the areas affected by alpine glaciation as identified by Alden were plotted over the geology on the base map. Utilizing the topographic

information on the base in conjunction with the geology and process data, differences in landform began to become evident. This then directed the photo-interpretation effort to the areas where landform changes were most likely to occur. Working back and forth between the map and photographs, sixteen subsections were delineated in Rock Creek and field checked for accuracy. The subsections were subsequently numbered beginning at the Continental Divide and working toward the mouth of the creek (Figure 3).

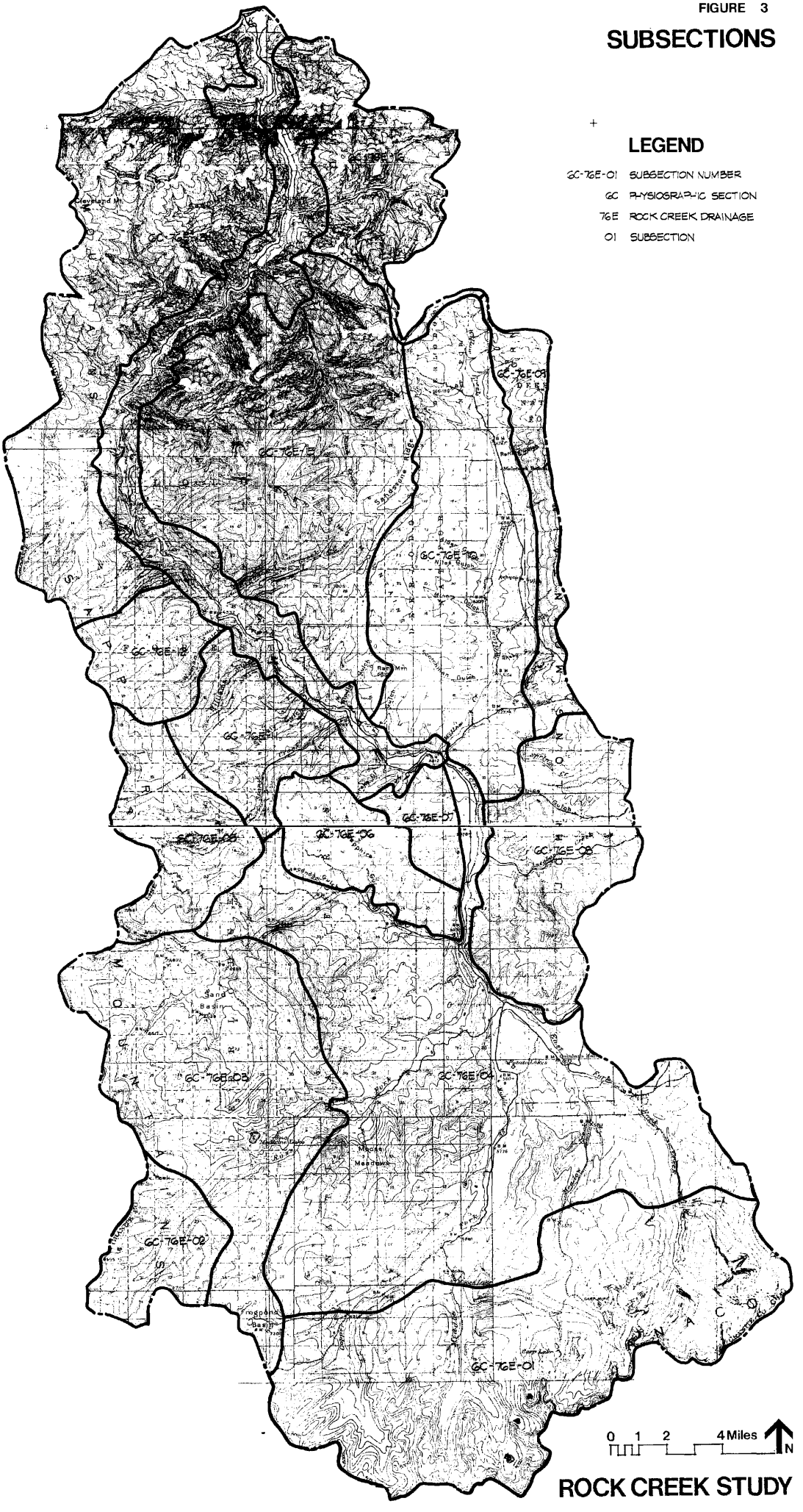
Phase 2: Recreational Land Unit Delineation

The topographic base, the geology maps and the aerial photographs used for Rock Creek subsection determination were all the materials needed to identify the RLU components which for the purposes of this study are:

1. Landform
2. Slope
3. Existing structure of vegetation

FIGURE 3

SUBSECTIONS



ROCK CREEK STUDY

The Landform Component
(Refer to Figure 4 - Landform Component Map)

Utilizing morphological data, which can be acquired through map and photo-interpretation as well as from the geology maps which indicate surficial deposits, a general understanding of earth materials can be acquired. Although this method is not nearly as beneficial as a soil survey, it does allow for a general interpretation of an area's ability to support certain recreation types (Peterson, 1973). Angus Hills, the famous Canadian planner, regards landforms to be superior to soil associations in determining land use capabilities since they provide the parent material and structure for soils, and thus are a better indicator for general land use planning purposes than the soil profile (Belknap and Furtado, 1967).

The landforms inventoried for the Rock Creek pilot study include:

Glaciated Uplands

Rounded Ridges

Fluvial Lands

Glacial Deposits

Alluvial Deposits

Glaciated Uplands

Glaciated uplands are those areas which have been scoured by glacial action; soils are generally shallow and rock outcroppings are common. Slopes are frequently unstable due to oversteepening, and revegetation is a problem (Morrison, 1973). These areas have already been identified on aerial photographs.

Rounded Ridges

Frost action is generally the dominant process in these areas that are frequently wide and gently to moderately sloping. Little fluvial erosion takes place since the coarse texture of the soil normally has a high permeability rate and allows little water to run off. Soils are often deep but with little profile development (U.S. Forest Service, 1972).

Fluvial Lands

Fluvial lands are those wherin erosion by water is generally the dominant process. The area does include some sites where other erosional vehicles predominate. However, in order to keep the number of land units to a minimum and to simplify the data gathering process, all lands which are not accounted for under the four remaining landform categories are referred to as fluvial lands.

Glacial Deposits

Glacial deposits normally consist of heterogeneous, nonstratified till, drift or moraine, ranging in composition from clay to large boulders. Some stratification and lensing are evident when water deposited, and perched water tables are common under these conditions. The landforms are potentially unstable particularly if water and clay are present (Morrison, 1973).

Alluvial Deposits

These are detrital deposits resulting from deposition by recent or ancient rivers and streams and some glaciofluvial deposits. The materials are generally subangular to well-rounded silt to boulder-sized. Alluvium is frequently quite permeable and a good source of water, however, water pollution can result from indiscriminate onsite sewage disposal (Morrison, 1973).

The Slope Component
(Refer to Figure 5)

Slope is viewed as a significant constraint on the use of any land area for recreational purposes. Intensive development on lands in excess of 10% slope normally requires extensive modification through construction. Assuming that most forest-related recreational activities are nature oriented, it follows that modification of the environment should be held to a minimum. This leads to the conclusion that development on slopes requiring extensive modification of the natural

FIGURE 4

LANDFORM

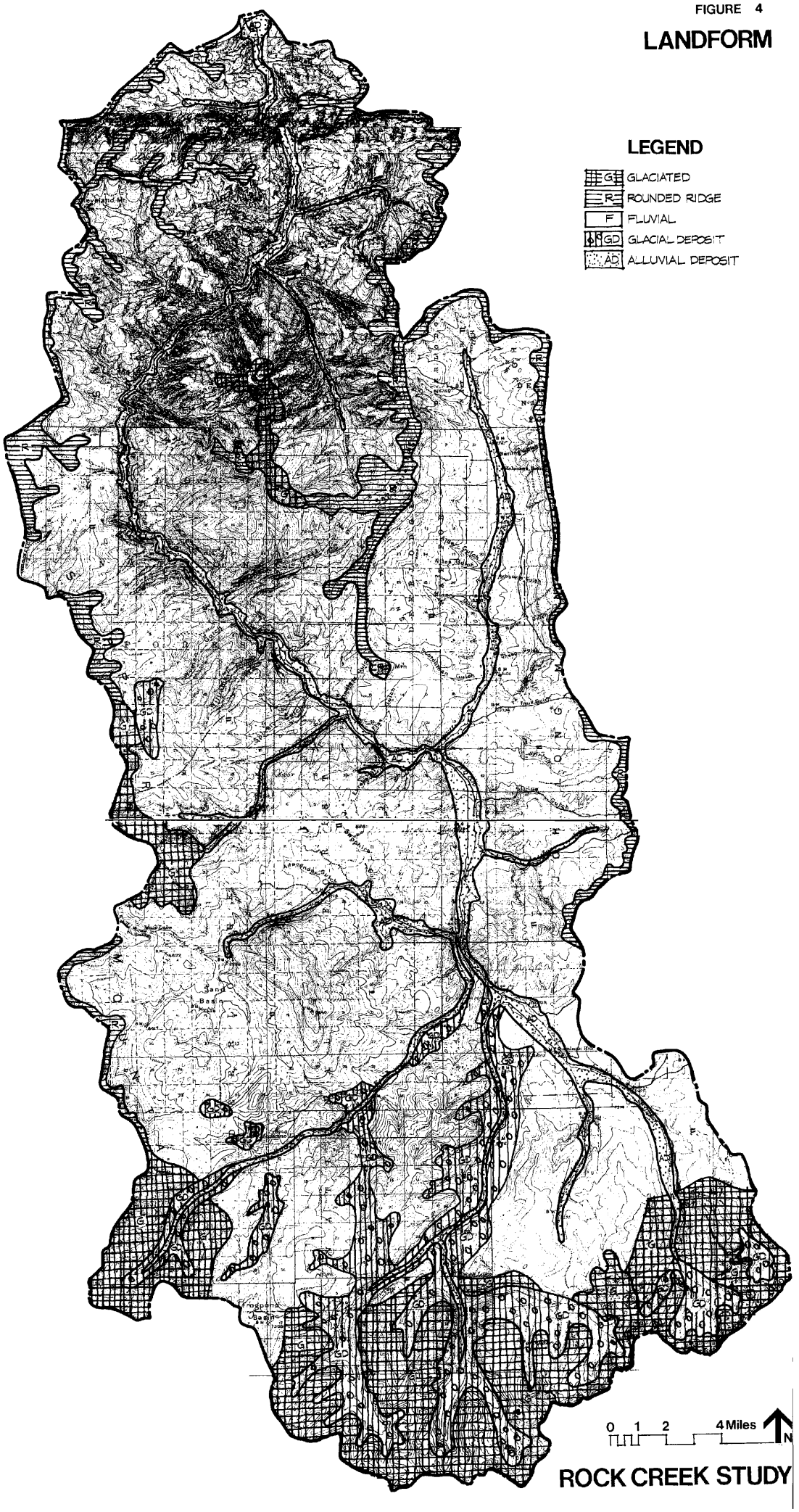


FIGURE 5

SLOPE

ROCK CREEK STUDY

order should be avoided. Slope also limits man's mobility and creates genuine hardships when traveling through areas where the gradient is excessive. Machines such as 4-wheel drive vehicles, trail bikes or snowmobiles also are restricted by increased gradient.

Three slope categories were selected for this study; the first two are standard Lolo National Forest categories, the third lumps all others into one group.

0 - 10% This is the most flexible gradient class since it presents the fewest constraints to development and to most recreation activities.

11 - 35% Within this class most hardy recreationists and motorized vehicles are mobile, but physical development normally requires significant landscape modification.

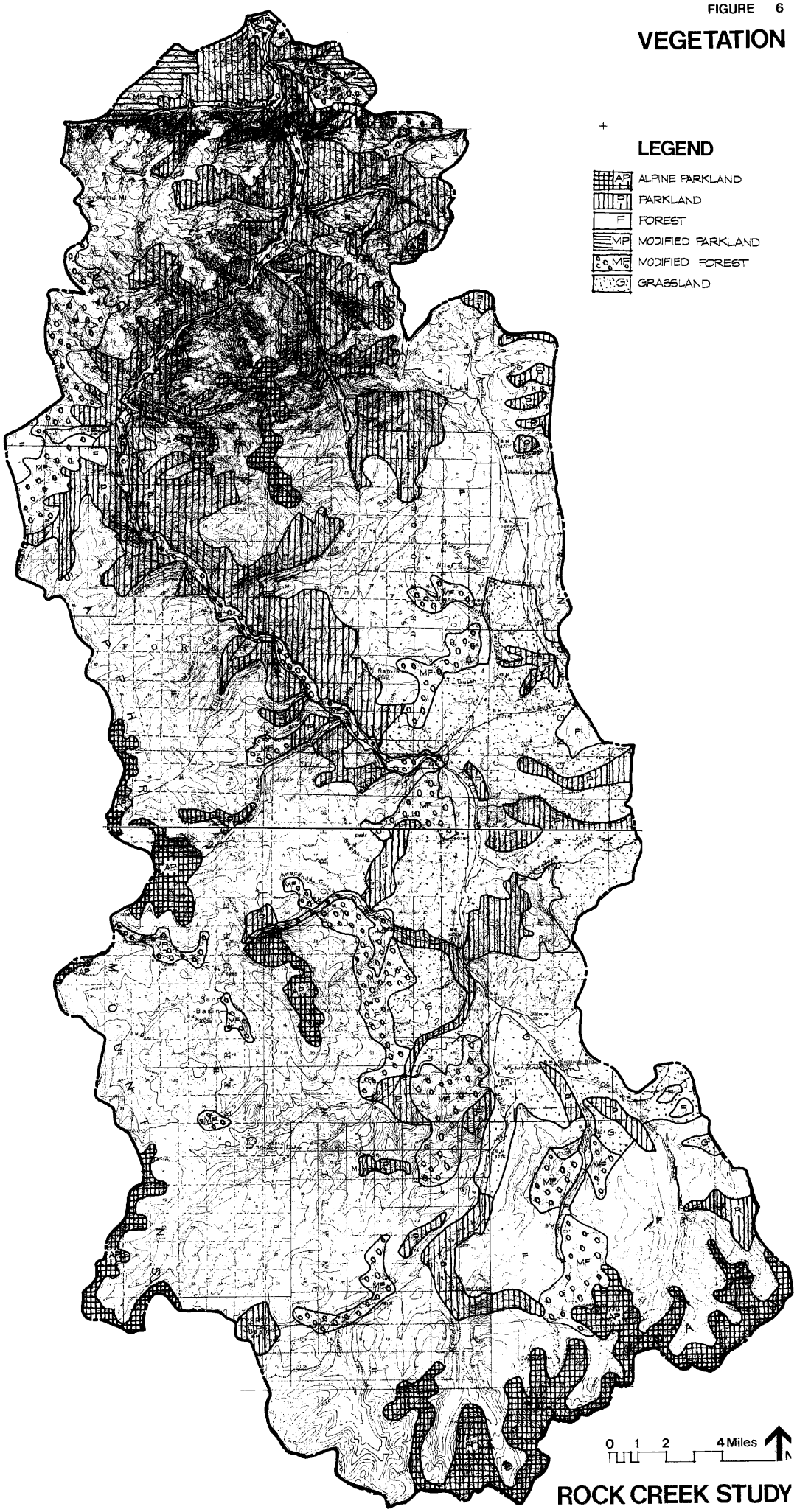
36% + Slopes of this class usually present real problems to any kind of use without the benefit of developments such as roads or trails.

The Vegetation Component (Refer to Figure 6)

Detailed information such as habitat type or even existing vegetation would require far more time to inventory than was available for this study. The potential vegetation of Kuchler (1964) was considered which gives a broad brush picture of the situation in the study area, but this was eliminated since it did not relate specifically enough to the problem. For example, knowing that a particular area has potential for growing Douglas-fir does not allow for an analysis of constraints, whereas structure of vegetation can be analyzed in terms of constraints as well as opportunities to engage in recreational activities. A modified vegetative structure system was developed by the author which could

FIGURE 6

VEGETATION



ROCK CREEK STUDY

could easily be interpreted on aerial photographs.

The classes are:

Alpine Parkland

Parkland

Forest

Modified Parkland

Modified Forest

Grassland

Alpine Parkland

This structural type is normally found in glaciated areas at high elevation in the alpine and subalpine zones. Crown cover can vary between 0 and 60 percent, and generally some understory vegetation exists such as beargrass.

Parkland

The open grassy south facing slopes normally fall in this category although parkland under this definition includes all natural areas, outside of the alpine and subalpine zones,

which have a crown cover between 10 and 60 percent.

Forest

This structural type includes all areas with a crown cover denser than 60 percent.

Modified Parkland - Modified Forest

A modified parkland or forest is one which unmolested would meet the criteria for Parkland or Forest, but which has been modified by man through clearcutting or some other extensive management procedure that has significantly altered its natural character.

Grassland

This structural type includes the areas with less than 10 percent crown cover with grass as the dominant vegetation.

Combining the components through overlays produces Recreational Land Units which, theoretically, have similar

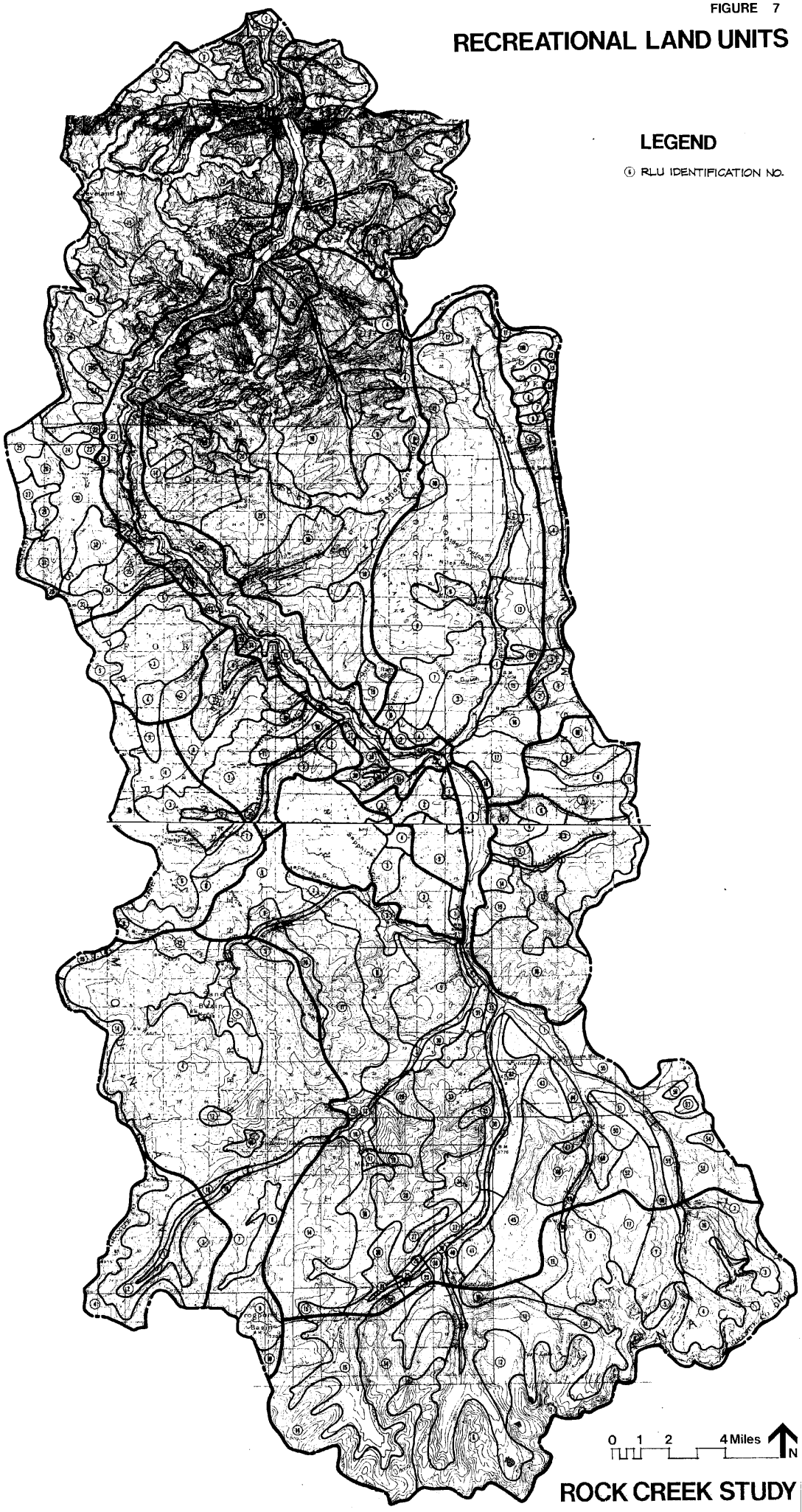
physical potential for recreational activity. Initially each component was mapped on a preregistered stable base overlay on the base map using whatever reference data was necessary. After all inventories were complete, a single map was produced which contained all components. This was accomplished by overlaying one component at a time on clear mylar which also had been preregistered to the original base map. The procedure for Rock Creek was to copy the landform component onto the Recreational Land Unit base first, scribing the letter symbol in each landform. Next the slope component was added to the Recreational Land Unit base along with its letter designation, which further subdivided the landform component into areas of differing slope categories. Then the vegetation was added yielding the completed Recreational Land Unit map (Figure 7). Each Recreational Land Unit consists of a three-digit symbol which reflects the three components.

Glaciated G -- 3 -- P Parkland

Steeply sloping

FIGURE 7

RECREATIONAL LAND UNITS



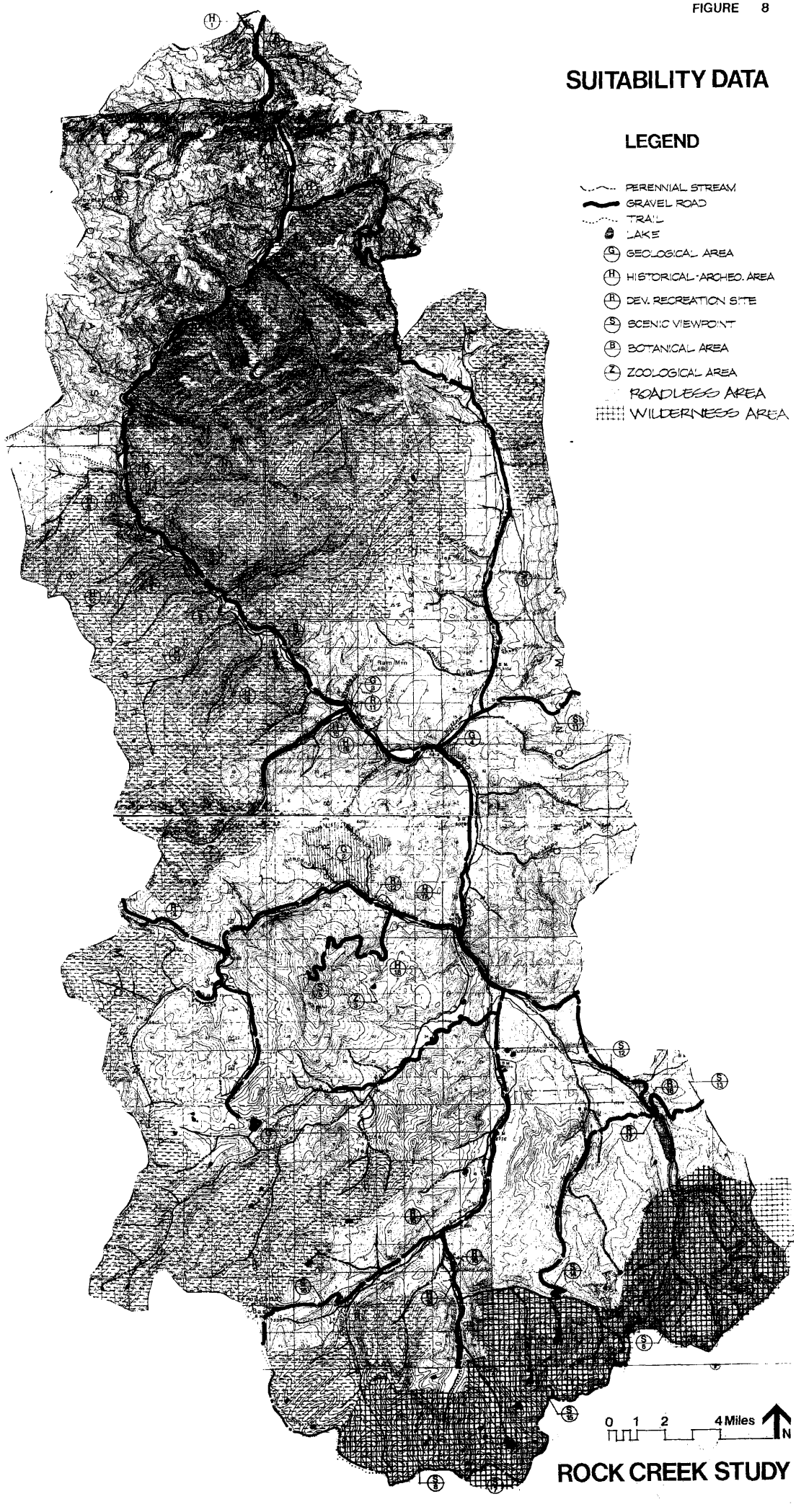
ROCK CREEK STUDY

Once the Recreational Land Units were identified they were assigned a number and planimetered for area. The number, components and area were all posted on a summary matrix, one of which must be prepared for each subsection. Unfortunately Figure 7 does not show the three-digit symbol within the Recreational Land Units since map reduction would obliterate some of the smaller units. However, each Recreational Land Unit is numbered by subsection and the components can be seen on the summary matrix sheets in Appendix A.

Phase 3: Suitability Data Collection

In order to establish suitability, it is necessary to inventory human influences and certain natural factors which can be viewed as modifiers regarding the use of an area for certain activity groups. This information is displayed on the Suitability Data Map (Figure 8). The suitability matrix (Figure 13) summarizes the items which are considered significant in determining suitability. One of the major criteria

FIGURE 8


SUITABILITY DATA
LEGEND
PERENNIAL STREAM
GRAVEL ROAD
TRAIL
LAKE
GEOLOGICAL AREA
HISTORICAL-ARCHEO. AREA
DEV. RECREATION SITE
SCENIC VIEWPOINT
BOTANICAL AREA
ZOOLOGICAL AREA
ROADLESS AREA
WILDERNESS AREA
0 1 2 4 Miles
N
ROCK CREEK STUDY

established in selecting these items was that they also be easily obtained from existing maps, records, aerial photographs or knowledgeable field personnel.

Some of the suitability data is easy to assess, for example, Scenery Class has already been determined and need only be noted on the summary matrix. Attractions like unique botanical areas, once mapped, either exist in a Recreational Land Unit or they do not, thus they too are easy to deal with. The problem was how to reasonably deal with access, adverse impacts, development and water features.

An index of relative density was prepared for access, development and water features which allowed for an assessment of the significance of these factors on recreational use. The access density index is calculated by dividing the miles of road or trail within a land unit by the acreage of the land unit and multiplying by 1,000. The 1,000 factor is used so that most numbers will be approximately unity, avoiding the need for cumbersome decimals. An identical procedure is

used for stream density; lakes, however, require a slightly different approach since areas are involved. Calculating the index of relative density of lakes requires dividing the lake acreage by the land unit acreage and, again, multiplying by 1,000. Calculating the index for development of recreation, archeologic and historic sites requires that the number of such sites within a particular land unit be determined. This number is then divided by the acreage of the unit and multiplied by 1,000. Assessing the effects of adverse visual and audial impacts is more difficult to quantify. With visual impacts, all potentially disturbing sites such as cutover areas, major roads, mining operations, etc., are viewed in photos and in the field and rated subjectively as being severe, moderate or minimal based upon the amount of visual dominance they impose on the environment.

Audial impacts are considered severe if the geographical center of a Recreational Land Unit lies within one mile of a paved highway or major noise producer such as a mill whistle

or siren. Moderate audial impacts result when the geographical center of the land unit falls within one to two miles of a through gravel road. Audial impacts are considered light when the center of the land unit falls within two to three miles of a through gravel road.

Determining suitability required overlaying the suitability map data on the Recreational Land Unit map and picking off all the quantifiable data such as miles of road or trail and acres of lake within each land unit. This information was posted on the suitability data sheets (Appendix B), and the indexes calculated according to the formulas previously described. A frequency distribution curve was calculated for all index data such as miles of perennial stream. Indexes which fell within one standard deviation of the mean were regarded as average density. Those lower or higher than one standard deviation received the appropriate score. The summary of calculated indexes can be seen on the suitability matrix (Figure 13).

Data from the suitability overlay that did not require quantification such as unique geologic features were posted directly on the summary matrix sheets. The calculated indexes of access, etc., for each land unit were also posted on the summary matrix sheets.

Phase 4: The Analysis

Once all the data is assembled, it can be systematically analyzed in order to reach some conclusions relating to recreation potential.

Scenery and Development Impact Capacity

The evaluation begins with the Scenery and Development Impact Capacity rating by subsections according to the criteria in Table 1. In order to arrive at the most objective rating from the criteria, it was felt that stereoscopic viewing would be the best method of analysis. This avoids the pitfall of attempting to view a particular area from the best vantage point on the ground. All areas are viewed

identically from above.

In Rock Creek, each subsection was viewed in total through the stereoscope in order to develop a feel for the land, its forms, vegetation and amount of modification. Then, each subsection was viewed through the stereoscope individually and rated according to the criteria. The results are posted on the Scenery and Development Impact Capacity Rating Chart (Figure 9). Totaling the scenery and development impact capacity (DIC) scores on the rating chart for the various criteria produces an index of the relative visual quality and absorption potential of a particular subsection.

The areas that rate highest for scenery are those that have been glaciated or, as in the case of the Rock Creek canyon (Figure 14), have been sharply incised by fluvial erosion. It is interesting to note that there is a close correlation between basic terrain variety, geologic features variety and vegetative pattern variety. High terrain variety scores in every case are followed by high scores under the

RATED BY DATE		SUBSECTION NUMBER																			
LRN 5/73		CC-TGE-01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16				
BASIC TERRAIN VARIETY	SCENERY	24	22	8	14	22	8	12	12	14	12	14	12	16	20	20	14				
	D.I.C.	6	8	22	16	8	22	20	20	16	20	16	20	14	12	12	16				
GEOLOGIC FEATURES VAR.		14	12	4	4	12	4	4	8	6	6	6	4	10	12	12	6				
WATER FEATURES VAR.		18	12	8	10	12	4	4	4	4	8	8	6	10	14	6	6				
VEG. PATTERN VARIETY	SCENERY	12	12	2	10	12	4	10	6	8	10	8	4	8	12	10	8				
	D.I.C.	12	12	2	10	12	4	10	6	8	10	8	4	8	12	10	8				
LAND USE EFFECTS	SCENERY	0	0	-2	-2	0	0	-4	0	0	8	-2	0	-4	4	0	-4				
	D.I.C.	0	0	-2	-2	0	0	-4	0	0	0	-2	0	-4	0	0	-4				
INDEX	SCENERY	68	58	20	36	58	20	26	30	32	44	34	26	40	62	48	30				
	D.I.C.	18	20	22	24	20	26	26	16	22	30	22	24	18	24	22	20				
SCENERY CLASS		VH	VH	L	A	VH	L	L	L	A	H	A	L	A	VH	H	L				
D.I.C. CLASS		A	A	A	H	A	H	H	H	A	H	A	H	A	H	A	A				

RATING SUMMARY

SCENERY CLASS		INDEX	D.I.C. CLASS	
VERY HIGH	VH	57 - 68	0 - 10	VL VERY LOW
HIGH	H	44 - 56	11 - 17	L LOW
AVERAGE	A	32 - 43	18 - 23	A AVERAGE
LOW	L	19 - 31	24 - 30	H HIGH
VERY LOW	VL	6 - 18	31 - 36	VH VERY HIGH

STUDY AREA
ROCK CREEK

SCENERY & D.I.C. RATING CHART

FIG. 9

remaining criteria. High DIC ratings normally coincide with low visual quality except in the case of the Rock Creek canyon, subsection 14. The positive score on land use effects in the canyon bottom raised the total sufficiently to exceed the average rating by one point.

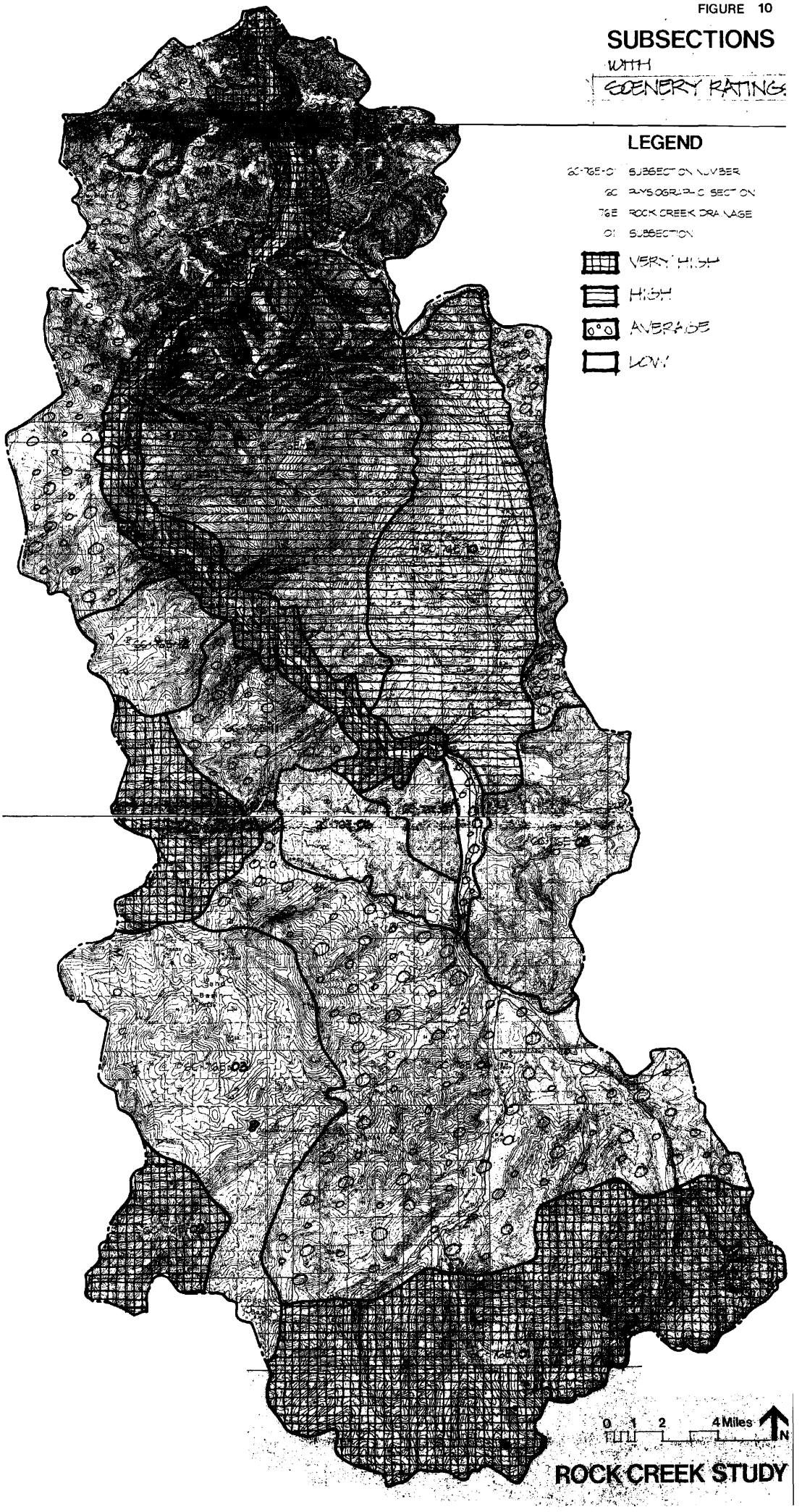
The pattern of visual landscape quality and DIC for Rock Creek can be seen on Figures 10 and 11. The scores for the various subsections are posted in the upper lefthand corner of the summary matrix for each subsection, to be used later in the suitability analysis.

Recreation Capability

Utilizing the recreational typology and analyzing each RLU component as it is effected by potential recreational use, a scoring system was developed to analyze land capability. The matrixes which appear on Figure 12 summarize the scoring procedure which works on a negative value system. For example, in the landform matrix, parameters which are considered

FIGURE 10

SUBSECTIONS WITH SCENERY RATING



ROCK CREEK STUDY

FIGURE 11


SUBSECTIONS
WITH
DEVELOPMENT IMPACT
CAPACITY RATINGS
LEGEND
GC-7GE-01 SUBSECTION NUMBER
GC PHYSIOGRAPHIC SECTION
7GE ROCK CREEK DRAINAGE
01 SUBSECTION
HIGH
AVERAGE
0 1 2 4 Miles
N
ROCK CREEK STUDY

significant such as compaction, depth, etc., are scored for each landform and potential activity group according to its capability to support that activity. Interpretations for the various landforms were made from the data in the St. Regis-Ninemile Area Soil Survey (U.S. Forest Service, 1972[B]) and from the geology report by Morrison (1973). The higher the score, the less suitable the landform is for a particular activity group. In assigning a capability score to each parameter it was important to bear in mind the types of recreation associated with each activity group in the typology.

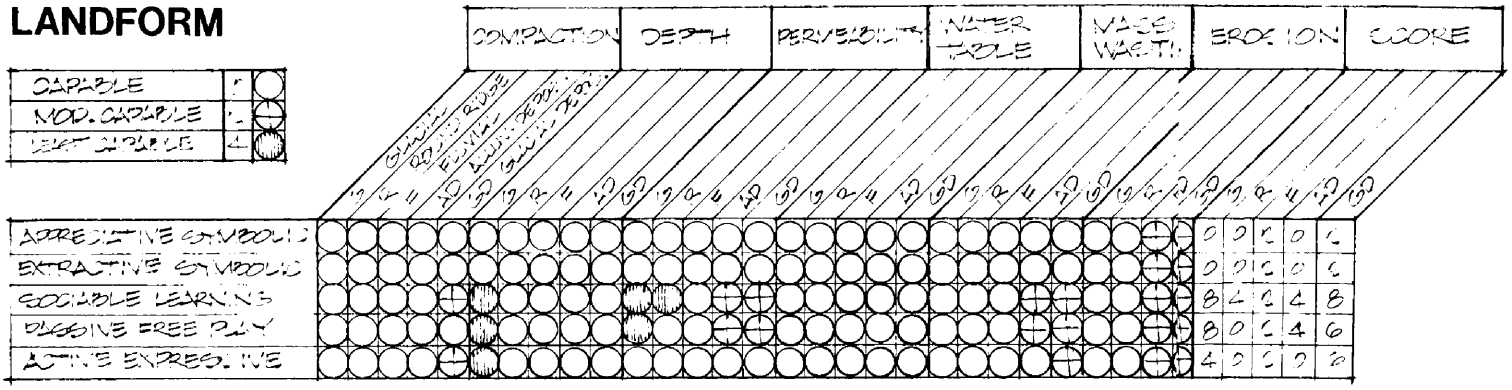
The remaining components, slope and vegetation, are not nearly as complex to analyze since there are no additional parameters to consider. Each component was analyzed according to its ability to support a particular activity group and rated either capable, moderately capable, or not capable.

Figure 12 contains a summary of all scores for all activity groups. Also the capability classes are shown in

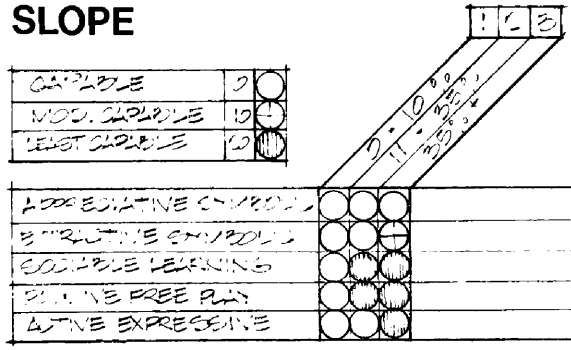
CAPABILITY MATRIX

FIGURE 12

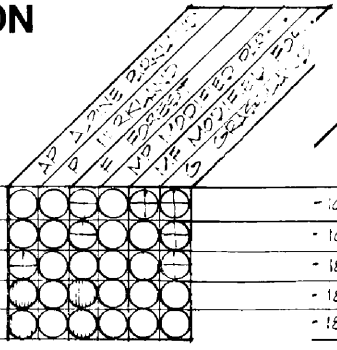
LANDFORM



SLOPE



VEGETATION



CAPABILITY SUMMARY

	MOST	MOD.	LEAST
	-10	11-19	20+
	-10	11-20	21+
	-18	19-27	28+
	-18	19-27	28+
	-18	19-27	28+

the lower righthand corner which allowed for classification of RLU's into a least, moderate, or most capable category depending on its components. These classes were determined subjectively based upon the scores generated within each of the individual components and the distribution of components in RLU's. The goal was to produce a representative balance between the extremes of relative capability. Appreciative symbolic recreation differs from the other groups in that no RLU's rate least capable. Primarily because these activities constitute minimal environmental impacts.

The data is summarized on the summary matrix sheets in Appendix A. Each RLU is listed there according to its number by subsection. The RLU's are rated for capability for each recreation activity group in the blocks at the bottom of the summary matrix sheets by tallying scores from the capability matrix according to the components listed for the particular RLU. Acreage totals are then summed horizontally for three capability classes, most, moderate or least, within

each activity group, and the totals are posted in the lower righthand corner of the summary matrix. When all scores have been summed, it is possible to tell at a glance the capability of the particular subsection to support the various recreation activity groups.

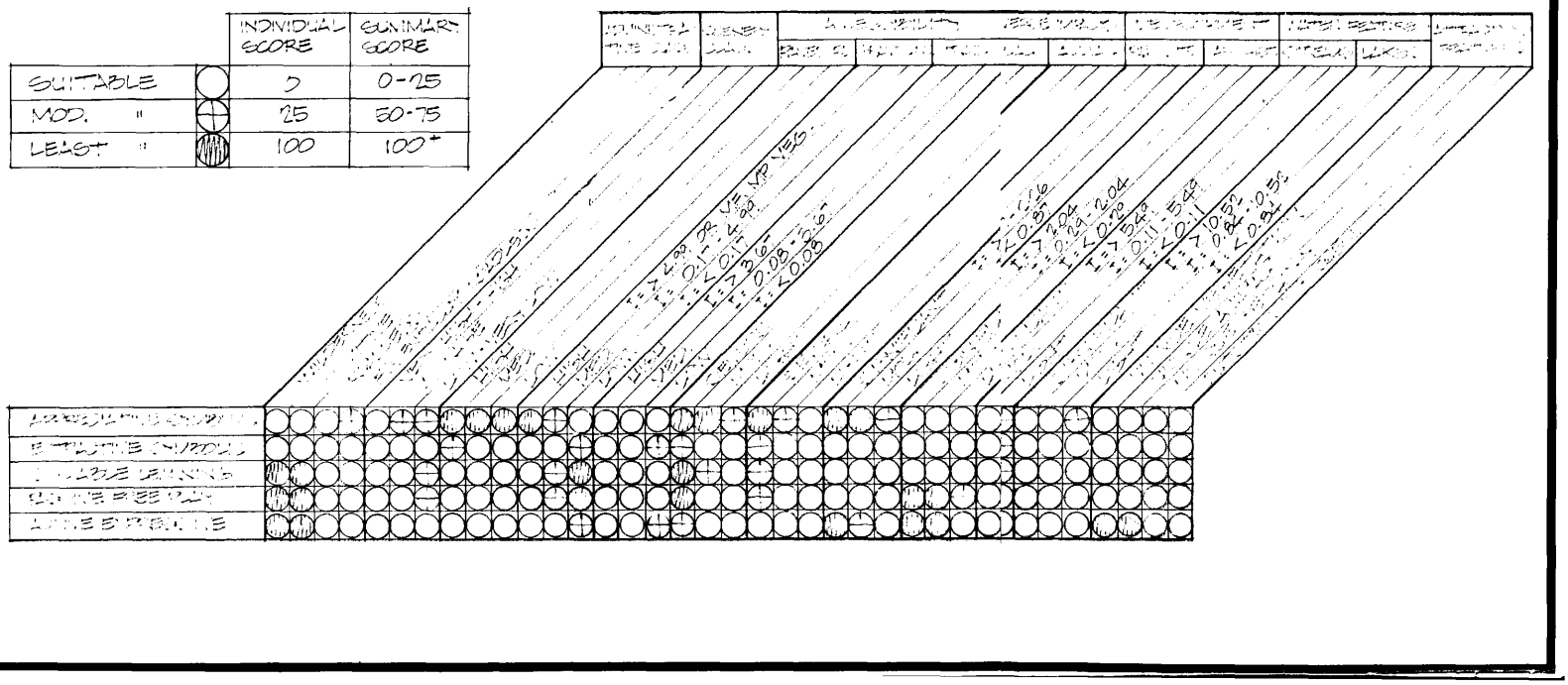
Recreation Suitability

Establishing land capability is not sufficient for determining what the land should be used for since there are, additionally, many social and cultural constraints and opportunities to consider. For example, a high mountain lake may be quite capable of supporting appreciative symbolic recreation in its pure form, but the fact that a highway passes close by renders it unsuitable.

Evaluating suitability for each land unit required working back and forth between the suitability matrix (Figure 13) and the summary matrix. The land unit receives a score for each of the headings on the suitability matrix according to the data posted on the summary matrix. For example, under

SUITABILITY MATRIX

FIGURE 13



scenery class, the second column on the suitability matrix, a land unit in a very high scenery category rates suitable for appreciative symbolic recreation and consequently receives a 0 score. However, a unit in a very low scenic quality area rates moderately suitable for appreciative symbolic recreation and gets a score of 25. One more score of 25 would cause the unit to be rated moderately suitable overall and three more 25's would render it unsuitable since a total score of 100 or greater creates an unsuitable rating for any particular unit. The box in the upper lefthand corner of Figure 13 indicates the individual scores and the effect of summing them on the total score for the individual land unit.

After determining the relative suitability of each land unit for each activity group according to the criteria, the rating was posted in the suitability block at the bottom of the summary matrix.

Upon completion of each subsection, the suitability blocks are tallied horizontally yielding an acreage total

for each suitability class, i.e., most moderate or least, for each recreational type.

Phase 5: Summary Analysis

In keeping with the concept that specific landscape types should rate similarly for scenery and for recreation potential, the following method is employed in developing a scale of values. Utilizing the data from the summary matrix sheets, a table is prepared for each recreation activity group. All subsections in Rock Creek are listed on each table along with the acreages in the most capable and most suitable classes for the particular activity group (Tables 2 through 6). A percentage of the total area of each subsection in the most capable and most suitable classes is calculated to give a relative scale of values. In order to give capability and suitability equal weight in the analysis, their percentage values are added together to give a score for each subsection. The scores are then listed in numerical order which identifies,

in priority, the subsections best suited for a particular activity group.

To simplify analysis and visual display of the data, numerical ratings for subsections are subdivided into three value classes, Class 1 being the most desirable for the particular activity group, Class 3 the least desirable. This information is plotted on Figures 14 through 18.

Appreciative symbolic recreation potential (Figure 14) is well distributed throughout the drainage. Desirability for this activity group, however, varies considerably. For example, subsection 14, the Rock Creek canyon is fifth in numeric order of desirability. This places it in Class 1, yet the road up the bottom coupled with extensive development on both private and Federal land obviously precludes appreciative symbolic recreation in this area. Similar conditions exist in subsection 10, the Willow Creek area which rates sixth in numeric order. These are factors that have to be taken into consideration in the final analysis and particularly

during the stage when conflicts between resources are being resolved. Actually only subsections 1, 3, 5 and 15 are viable possibilities for appreciative symbolic recreation in Rock Creek.

Over 50 percent of the drainage rates as Class 1 for extractive symbolic recreation with the major concentration in the southerly half. Strangely enough, the Rock Creek canyon, subsection 14, with its Blue Ribbon trout stream classification is not rated Class 1. This can be explained by the fact that extractive activities in general are not desirable in areas that accommodate relatively heavy concentrations of people.

Sociable learning recreation opportunities (Figure 16) are also quite well distributed throughout the study area. All subsections that rate high for this activity lie in or adjacent to the major vehicle access corridors. Areas developed for this activity group will be nodes of concentration for people. Referring to Table 4, it becomes quite obvious that

subsections 4 and 14 are by far the most desirable areas for sociable learning recreation from a capability-suitability standpoint. These units in combination represent the backbone of the entire drainage providing ready access to nearly any other area in Rock Creek. Careful consideration must be given to the range of additional recreation opportunities available in the final selection of lands to satisfy the need for this type of recreation.

Passive free play recreation (Figure 17) much like sociable learning requires easy access. As stated in the definition of this activity group, it requires a minimum of effort in gaining satisfaction. The capability-suitability data summarized on Table 5 indicates that subsections 4, 10 and 14 constitute the best suited area for this type of use. All other areas in the drainage are readily accessible from this nucleus allowing for maximum flexibility of additional recreation opportunity.

The highest potential for active expressive recreation

(Figure 18) lies principally in the southerly half of the study area. Subsection 4 stands out because of the extensive acreage both capable and suitable for this activity group. Active expressive recreation has the highest potential for disturbance of recreationists engaging in other pursuits, but it is also probably the most compatible group with respect to resource development activities. The range of total scores (capability plus suitability, Table 5) indicates that this activity group has potential in nearly every area in the Rock Creek drainage. In the final analysis of resource trade offs, this activity group will be key in maintaining a balance of recreation opportunities.

Resolving Compatibility

Viewing Figures 14 through 18, it becomes very apparent that there is much overlap of recreation potential between subsections, some of which are rated Class 1 for four activity groups. Some of these activities are compatible, others are

TABLE 2

SUMMARY OF APPRECIATIVE SYMBOLIC RECREATION

SUBSECTION	ACRES	AC. MOST CAPABLE	% OF SUBS.	AC. MOST SUITABLE	% OF SUBS.	TOTAL % CAP. + SUIT.	NUMERIC ORDER	VALUE CLASS
GC-76E-01	71.232	43.003	60.4	57.536	80.8	141.2	2	1
02	11.072	9.280	83.8	11.072	100	183.8	1	1
03	49.536	1.992	10.1	1.856	3.7	13.8	15	3
04	100.480	19.264	19.2	2.624	2.6	21.8	12	3
05	17.280	7.040	40.7	10.240	59.3	100.0	4	1
06	13.632	1.408	10.3	0	0	10.3	16	3
07	5.632	2.752	48.9	0	0	48.9	8	2
08	29.056	7.552	26.0	0	0	26.0	11	2
09	11.520	4.096	35.6	0	0	35.6	10	2
10	48.064	5.632	11.7	25.664	53.4	65.1	6	1
11	15.744	3.264	20.7	0	0	20.7	13	3
12	10.560	1.472	13.9	0	0	13.9	14	3
13	62.720	29.632	47.2	0	0	47.2	9	2
14	39.040	33.728	86.4	0	0	86.4	5	1
15	61.504	36.032	58.6	46.656	75.9	134.5	3	1
16	23.616	13.440	56.9	0	0	56.9	7	2

ACREAGE BY VALUE CLASS AND PERCENT OF ROCK CREEK DRAINAGE

CLASS 1	ACRES 143,192	CLASS 2	ACRES 132,544	CLASS 3	ACRES 189,952
	% OF DRAINAGE 43.5		% OF DRAINAGE 23.2		% OF DRAINAGE 33.3

FIGURE 14


SUBSECTIONS
RATED FOR
APPRECIATIVE
SYMBOLIC RECREATIO
LEGEND
6C-76E-01 SUBSECTION NUMBER
6C PHYSIOGRAPHIC SECTION
76E ROCK CREEK DRAINAGE
01 SUBSECTION
CLASS 1
CLASS 2
CLASS 3
0 1 2 4 Miles
N
ROCK CREEK STUDY

TABLE 3

SUMMARY OF EXTRACTIVE SYMBOLIC RECREATION POTENTIAL

SUBSECTION	ACRES	AC. MOST CAPABLE	% OF SUBS.	AC. MOST SUITABLE	% OF SUBS.	TOTAL % CAP. + SUIT.	NUMERIC ORDER	VALUE CLASS
CC-76E-01	71.232	24,480	34.4	60,760	85.4	119.8	2	1
02	11.072	3,520	31.8	11.072	100	131.8	1	1
03	49.536	6,464	13.0	45,888	92.6	105.6	3	1
04	100.480	31,552	31.4	49,984	49.7	81.1	6	1
05	17.280	7,296	42.2	9,536	55.2	97.4	4	1
06	13.632	576	4.2	9,088	66.7	70.9	10	2
07	5.632	2,048	36.4	2,048	36.4	72.8	8	2
08	29.056	5,312	18.3	0	0	18.3	16	3
09	11.520	2,304	20.0	0	0	20.0	15	3
10	48.064	8,320	17.3	10,624	22.1	39.4	13	3
11	15.744	640	4.1	3,963	25.2	29.3	14	3
12	10.560	1472	13.9	6,976	66.1	80.0	7	2
13	62.720	11,072	17.7	21,632	34.6	52.3	12	3
14	39.040	9,024	23.1	19,136	49.0	72.1	9	2
15	61.504	12,992	21.1	38,912	63.3	84.4	5	1
16	23.616	4,864	20.6	10,240	43.4	64.0	11	2

ACREAGE BY VALUE CLASS AND PERCENT OF ROCK CREEK DRAINAGE

CLASS 1	ACRES 311,104	CLASS 2	ACRES 92,480	CLASS 3	ACRES 167,104
	% OF DRAINAGE 54.5		% OF DRAINAGE 16.2		% OF DRAINAGE 29.3

FIGURE 15

SUBSECTIONS RATED FOR EXTRACTIVE SYMBOLIC RECREATIO

LEGEND

- SUBSECTION NUMBER
- PHYSIOGRAPHIC SECTION
- ROCK CREEK DRAINAGE
- SUBSECTION
- CLASS 1
- CLASS 2
- CLASS 3

0 1 2 4 Miles

N

ROCK CREEK STUDY

TABLE 4

SUMMARY OF SOCIABLE LEARNING RECREATION POTENTIAL

SUBSECTION	ACRES	AC. MOST CAPABLE	% OF SUBS.	AC. MOST SUITABLE	% OF SUBS.	TOTAL % CAP. + SUIT.	NUMERIC ORDER	VALUE CLASS
6C-76E-01	71.232	896	1.3	576	0.8	2.1	9	2
02	11.072	320	2.9	0	0	2.9	7	2
03	49.536	5,824	11.8	192	0.4	12.2	5	1
04	100.480	22,272	22.2	21,696	21.6	43.8	2	1
05	17.280	2,880	16.7	0	0	16.7	4	1
06	13.632	0	0	0	0	0	13	3
07	5.632	0	0	0	0	0	13	3
08	29.056	512	1.8	0	0	1.8	10	2
09	11.520	0	0	0	0	0	13	3
10	48.064	4736	9.9	4,800	10.0	19.9	3	1
11	15.744	640	4.1	640	4.1	8.2	6	1
12	10.560	0	0	0	0	0	13	3
13	62.720	128	0.2	0	0	0.2	12	3
14	39.040	8,832	22.6	9024	23.1	45.7	1	1
15	61.504	512	0.8	0	0	0.8	11	2
16	23.616	256	1.1	256	1.1	2.2	8	2

ACREAGE BY VALUE CLASS AND PERCENT OF ROCK CREEK DRAINAGE

CLASS 1	ACRES 270,144	CLASS 2	ACRES 196480	CLASS 3	ACRES 124,064
	% OF DRAINAGE 47.3		% OF DRAINAGE 34.4		% OF DRAINAGE 18.2

FIGURE 16

SUBSECTIONS RATED FOR SOCIABLE LEARNING RECREATION

LEGEND

- 6C-76E-01 SUBSECTION NUMBER
- 6C PHYSIOGRAPHIC SECTION
- 76E ROCK CREEK DRAINAGE
- 01 SUBSECTION
- CLASS 1
- CLASS 2
- CLASS 3

0 1 2 4 Miles N

ROCK CREEK STUDY

TABLE 5

SUMMARY OF PASSIVE FREE PLAY RECREATION POTENTIAL

SUBSECTION	ACRES	AC. MOST CAPABLE	% OF SUBS.	AC. MOST SUITABLE	% OF SUBS.	TOTAL % CAP. + SUIT.	NUMERIC ORDER	VALUE CLASS
GC-76E-01	71.232	0	0	9792	13.7	13.7	5	1
02	11.072	0	0	0	0	0	13	3
03	49.536	2048	4.1	192	0.4	4.5	6	1
04	100.480	16.448	16.4	53.203	53.0	54.4	1	1
05	17.280	0	0	704	4.1	4.1	7	2
06	13.632	0	0	0	0	0	13	3
07	5.632	0	0	0	0	0	13	3
08	29.056	512	1.8	0	0	1.8	9	2
09	11.520	0	0	1792	15.6	15.6	4	1
10	48.064	4736	9.9	8123	16.9	26.8	2	1
11	15.744	0	0	640	4.1	4.1	8	2
12	10.560	0	0	0	0	0	13	3
13	62.720	103	0.2	0	0	0.2	12	3
14	39.040	7.323	22.0	2112	5.4	25.4	3	1
15	61.504	0	0	576	0.9	0.9	11	2
16	23.616	256	1.1	0	0	1.1	10	2

ACREAGE BY VALUE CLASS AND PERCENT OF ROCK CREEK DRAINAGE

CLASS 1	ACRES 319.872 / % OF DRAINAGE 56.0	CLASS 2	ACRES 147.200 / % OF DRAINAGE 25.8	CLASS 3	ACRES 103.616 / % OF DRAINAGE 18.2

FIGURE 17


SUBSECTIONS
RATED FOR
PASSIVE FREE PLAY
RECREATION
LEGEND
SUBSECTION NUMBER
PHYSIOGRAPHIC SECTION
ROCK CREEK DRAINAGE
SUBSECTION
CLASS 1
CLASS 2
CLASS 3
0 1 2 4 Miles
N
ROCK CREEK STUDY

TABLE 6

SUMMARY OF ACTIVE EXPRESSIVE RECREATION POTENTIAL

SUBSECTION	ACRES	AC. MOST CAPABLE	% OF SUBS.	AC. MOST SUITABLE	% OF SUBS.	TOTAL % CAP. + SUIT.	NUMERIC ORDER	VALUE CLASS
GC-76E-01	71.232	544	0.8	23,104	32.4	33.2	15	3
02	11.072	0	0	11,072	100	100.0	3	1
03	49.536	3,008	6.1	48,640	98.2	104.3	2	1
04	100.480	46,720	46.5	82,280	81.9	128.4	1	1
05	17.280	704	4.1	8832	51.1	55.2	12	1
06	13.632	3264	23.9	9088	66.7	90.6	4	1
07	5.632	2048	36.4	2043	36.4	72.8	6	1
08	29.056	13.952	48.0	5952	20.5	68.5	9	2
09	11.520	2624	22.8	1792	15.6	38.4	14	3
10	48.064	17,664	36.8	11,200	23.3	60.1	11	2
11	15.744	0	0	4800	30.5	30.5	16	3
12	10.560	0	0	8448	80.0	80.0	5	1
13	62.720	5056	8.1	27,072	43.2	51.3	13	3
14	39.040	8000	20.5	20,288	52.0	72.5	8	2
15	61.504	2496	4.1	42,176	68.6	72.7	7	2
16	23.616	2304	9.8	13,568	57.5	67.3	10	2

ACREAGE BY VALUE CLASS AND PERCENT OF ROCK CREEK DRAINAGE

CLASS 1	ACRES 190,912	CLASS 2	ACRES 201,280	CLASS 3	ACRES 178,496
	% OF DRAINAGE 33.5		% OF DRAINAGE 35.3		% OF DRAINAGE 31.3

FIGURE 18


SUBSECTIONS
RATED FOR
ACTIVE EXPRESSIVE
RECREATION
LEGEND
SUBSECTION NUMBER
PHYSIOGRAPHIC SECTION
ROCK CREEK DRAINAGE
SUBSECTION
CLASS 1
CLASS 2
CLASS 3
0 1 2 4 Miles
N
ROCK CREEK STUDY

not. Conklin (1972) relates specifically to the incompatibility of motorized and non-motorized use where, although the motorized recreationists were very tolerant, the hikers, cross country skiers, etc., objected strenuously to motorized use.

Considering the uses related to each of the groups in the typology, the compatibility matrix (Table 7) is offered as a means to understand and resolve conflicts. Under appreciative symbolic, Column A, only extractive symbolic recreation is regarded as being compatible primarily because preservation of the environment in its natural state is important to each of these activity groups. The remaining recreational types require either modification of the environment or the use of motorized vehicles which conflict with activities focusing on the natural environment.

Extractive symbolic recreation is considered compatible with all activities except sociable learning with which it is

TABLE 7

COMPATIBILITY MATRIX

	○ Most ⊕ Moderate ◐ Least	A Appreciative Symbolic	B Extractive Symbolic	C Sociable Learning	D Passive Free Play	E Active Expressive
A	Appreciative Symbolic	○	○	◐	◐	◐
B	Extractive Symbolic	○	○	⊕	○	○
C	Sociable Learning	◐	⊕	○	○	◐
D	Passive Free Play	◐	○	○	○	○
E	Active Expressive	◐	○	◐	○	○

only moderately compatible. This rating results from the potential problems of encouraging the extraction of forest products from areas adjacent to developed sites.

The only other major conflict is between sociable learning and active expressive recreation which could prove potentially dangerous due to the nature of the activities in each group.

The final analysis is conducted using Figure 19 where the information from Tables 2 through 6 is combined with the compatibility matrix (Table 7).

Only Class 1 areas from the tables are considered in this analysis unless no Class 1 recreation potential exists, such as in subsection 8, 13 and 16. Column 1 on Figure 19 is an analysis of compatibility between appreciative symbolic recreation and all other potential recreation uses for a particular subsection.

Column 2 relates to extractive symbolic in evaluating compatibility between the remaining possible uses. Columns

3 and 4 are used for analyzing sociable learning and passive free play compatibility. For example, in Column 1, subsection 2 shows Class 1 potential for appreciative symbolic (A), extractive symbolic (B), and active expressive (E) recreation. The data was extracted from Tables 2 through 6. Not all of these activity groups are compatible with each other as can be seen on Table 7, thus all three uses cannot be proposed for this subsection. Conflicts are resolved as follows: Under the A (Appreciative symbolic recreation) in Column 1, the black box indicates that the other possible uses in the subsection are being evaluated against it. In this case, B (Extractive symbolic) is compatible, E (Active expressive) is not. The process is continued in the other columns until all possible combinations of the five activity groups have been evaluated for compatibility.

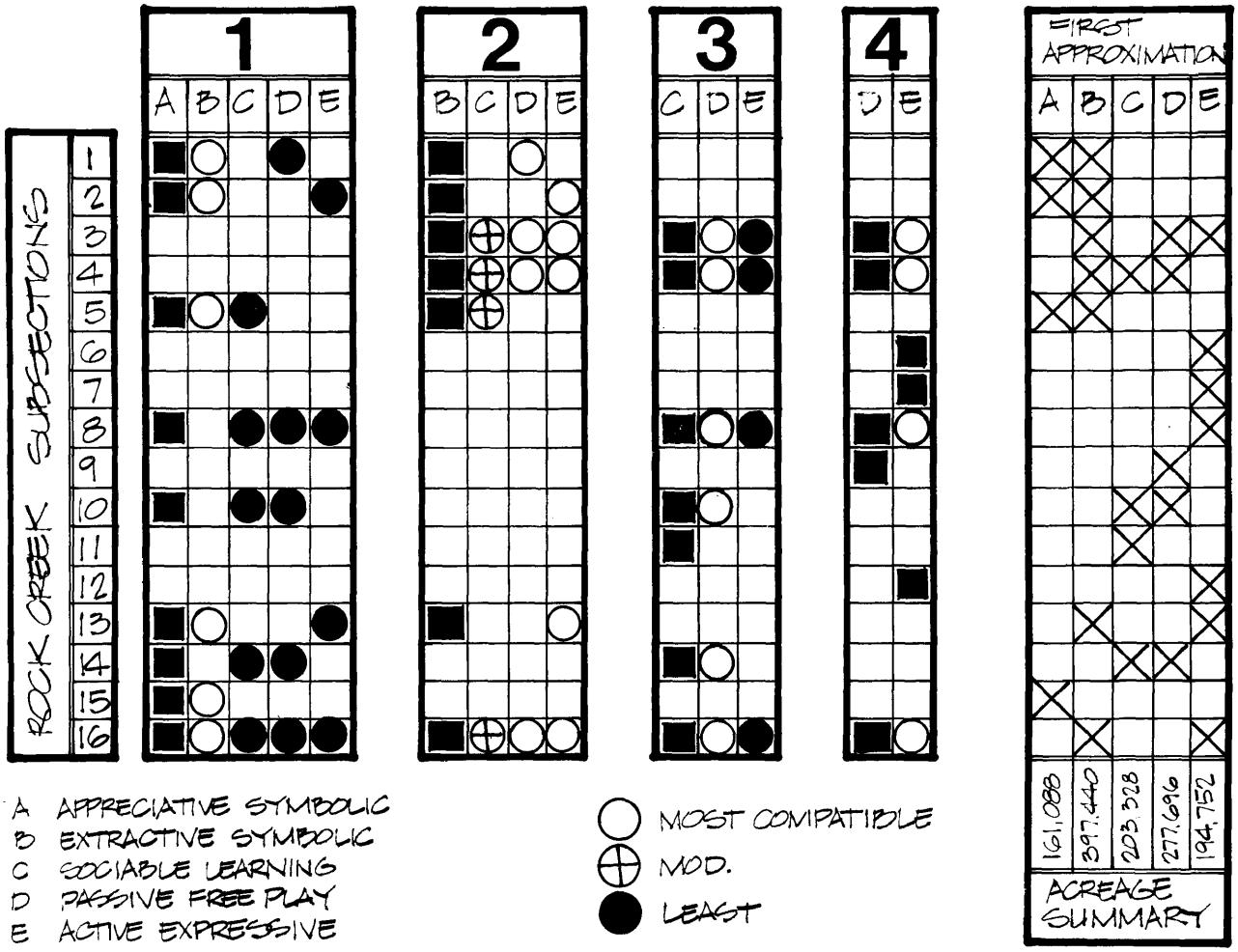
In the case of subsection 2, the analysis shows two possible choices for recreation use; a combination of A and B, appreciative and extractive symbolic, or B and E, extractive

symbolic and active expressive. For the first approximation on Figure 19, the first combination has been selected.

Conducting the analysis for all subsections yields the completed first approximation (Figures 19 and 20). The selection of the various alternatives within each subsection was based partly on present use in the area and also the relative desirability of the area for the various potential uses. This is strictly a subjective rating and should be evaluated by those involved in decision making in Rock Creek.

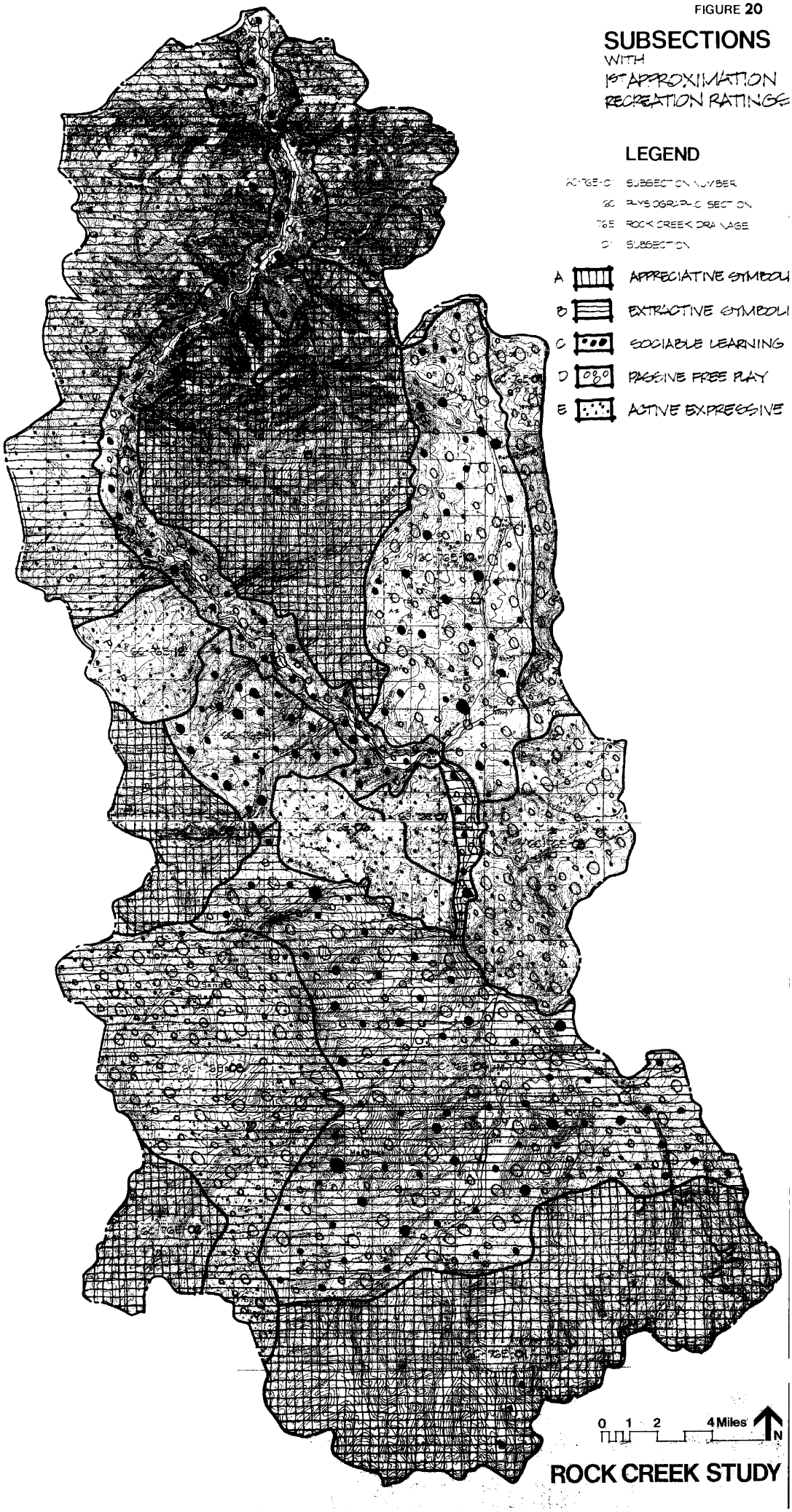
Figure 19, then, is the tool which allows for integration of this recreation information with other resource data for Rock Creek. The first approximation is only one man's assessment; should the decision makers want to change potential use for one or more subsections they can develop any number of approximations using the data from Tables 7 and 8, and 2 through 6. The various approximations provide a monitoring system which allows planners and managers as

well as interested citizens to quantify the effects of various decisions on the recreation potential of Rock Creek.



ANALYSIS MATRIX FIGURE 19

FIGURE 20


SUBSECTIONS
WITH
1ST APPROXIMATION
RECREATION RATINGS
LEGEND
SUBSECTION NUMBER
PHYSIOGRAPHIC SECTION
ROCK CREEK DRAINAGE
SUBSECTION
A APPRECIATIVE SYMBOLI
B EXTRACTIVE SYMBOLI
C SOCIABLE LEARNING
D PASSIVE FREE PLAY
E ACTIVE EXPRESSIVE
0 1 2 4 Miles
N
ROCK CREEK STUDY

CHAPTER IV

SUMMARY

Lack of regional scale information on recreation potential has severely hampered planners, on the Lolo National Forest, from making equitable decisions relating to recreation in the current land use planning effort. This study was undertaken to explore a method of analyzing recreation potential on a large scale to fill the void which currently exists and allow for more rational decision making.

It represents a unique approach to the assessment of wildland recreation potential. Whereas most recreation analysis are site specific, this one evaluates the landscape continuum as it is able to support the spectrum of recreation activities. Basic to this analysis is the land itself which is, to some degree, capable of supporting

certain uses. A second fundamental consideration is that all types of outdoor recreation can be grouped into five categories referred to as the recreation typology. The five categories are:

appreciative symbolic recreation
extractive symbolic recreation
sociable learning recreation
passive free play recreation
active expressive recreation

The analysis is predicated on two assumptions: First, areas of similar landform should rate similarly for scenic appeal. Second, these same areas should also rate similarly for their recreation potential.

Using some basic components of the land, that is, geology, physiography and topography, broad areas of similar landform are identified which are referred to as subsections. A predetermined set of criteria is used to evaluate the scenic appeal of each of the sixteen subsections which were

identified in the study area. Also incorporated in the criteria for evaluating scenery is a separate scoring system to evaluate the development impact capacity (DIC) of the landscape. The DIC rating is theoretically an indication of the relative visual impact that can be absorbed by the land without detrimental effect. Whereas the scenery rating is incorporated further in the suitability portion of the recreation analysis, the DIC is not used until such time in the future when land use alternatives are being evaluated.

Determining recreation potential required assembling and analyzing more physical and cultural data. Subsections were broken down into areas of similar landform, slope and vegetative cover called Recreational Land Units (RLUs). These three components of the RLUs were selected because they are significant in determining what the land is capable of supporting and also because they are readily available from existing data sources such as maps and aerial photographs.

Analyzing the components of the land as they are able to support the activities in the recreation typology led to an assessment of land capability by RLU. Capability, however, is restricted to bio-physical considerations; therefore, a suitability rating system was also developed which allowed for analysis of the influence of man in the landscape.

Each RLU was evaluated for capability and suitability for each of the five activity groups in the typology. Ultimately, the relative desirability of a particular subsection for each of the activity groups is determined by totaling the acreage of the RLUs within the subsection by capability and suitability class (most, moderate or least). This tended to verify that differing landform types (subsections) rated differently for various recreational activities.

Areas that are most desirable for appreciative symbolic recreation tend to be those which are most rugged and scenic. In general these areas are delicate from a bio-physical standpoint. Because of this they are relatively undeveloped

and thus also rate high for appreciative symbolic use from a cultural standpoint.

Landscape type seems to have little effect on extractive symbolic recreation. This activity has few specific requirements and can occur nearly anywhere. All types of landscapes proved to be both highly capable and suitable for extractive symbolic recreation. Sociable learning and passive free play activities, in contrast, are limited to the gentler landscapes since they require some type of physical development. Opportunities for active expressive recreation, much like the extractive symbolic activities, appear to be little affected by terrain and therefore occur extensively throughout Rock Creek.

Having evaluated the areas that are most desirable for the different recreation activity groups, potential conflicts were identified between them. A method was devised to synthesize opportunities and conflicts in order to provide an equitable mix of recreation in the Rock Creek watershed.

The synthesis process is flexible; it allows for exploration of various alternatives and for the quantification of effects in terms of acreage gained or lost to various recreation opportunities.

CHAPTER V

CONCLUSIONS

Although the information generated by this analysis is very general, it appears to have satisfied the need for a gross assessment of the recreation potential of Rock Creek. This study should not be mistaken for a recreation plan. None of the socio-economic data so critical to the evolution of a viable plan is considered here. No public involvement is incorporated into the analysis of the data. That information and involvement will enter at the next level of planning. The purpose of this study is to gain a general understanding of the recreation potential of the Rock Creek drainage. This information will be made available to the public, the planners and the decision makers as they assess relative values in determining resource allocation in the individual unit plans.

At the unit planning level more specific resource information will be coupled with the necessary socio-economic data and public involvement in developing management plans. The information contained in this study can be referred to for perspective in terms of the total recreation resource in Rock Creek. For example, the data for a portion of a planning unit may indicate some potential for sociable learning recreation. This land use would be in conflict with other uses such as grazing or timber harvest, and conflicts would have to be resolved. The recreation overview allows the comparison of the area in question with other such areas in Rock Creek. Further analysis of the social and economic factors involved as well as the public response will allow the manager to make his decision from a firm base of information.

In retrospect, the process demonstrated here appears to be overly complex for the depth of data sought at the subsection level. The tedium of subdividing subsections

into Recreational Land Units for analysis only to reaggregate for the summation could probably be improved upon greatly. Correlations which began to become evident as the data was summarized could well be the key to simplifying the process. Areas with greatest terrain variety also proved to be most variable in geology and vegetation and thus rated as the most scenic areas. These same areas rated highest for appreciative symbolic recreation. Correlations between scenery and other recreation activity groups are not nearly as evident, however, indicating that some form of biophysical analysis should be used but not as detailed as the present approach.

The Development Impact Capacity (DIC) rating attempted in this study is totally inadequate. Although it is not incorporated in the analysis process, it could be most beneficial at the unit planning level in helping to resolve conflicts. Areas that have high visual impact absorption

potential can probably support conflicting land uses such as developed recreation and timber harvest since adverse visual effects can be minimized. The DIC ratings from this study will be used in this manner, but it is recognized that they leave much to be desired.

Although the procedure outlined here is far from perfect, it is, nevertheless, being applied to the entire Lolo National Forest. Most of the tedium of the analysis in phases 5 and 6 is being eliminated, however.

The author has been able to enlist the services of the Automatic Data Processing Branch of the Forest Service Regional Office in Missoula for converting the system to computer analysis. The systematic nature of the process lends itself readily to this approach.

Richard Roullier, program analyst, and Bert Clinkingbeard, computer programmer, have succeeded in converting the system in phases 4 and 5 for use on the computer.

This will save considerable time and effort, and allow for a complete assessment of the recreation potential of the Lolo National Forest in less than one year.

LITERATURE CITED

Alden, W. C.
1953. Physiography and glacial geology of Western Montana and adjacent areas. Geological Survey Professional Paper 231, United States Government Printing Office, Washington, D.C.

Alvis, Richard
1968. Soil reconnaissance of the Rock Creek bottom from Ranch Creek to Gilles Bridge. Unpublished report, U.S. Forest Service.

Belknap, Raymond K., and John G. Furtado
1967. Three approaches to environmental resource analysis. The Conservation Foundation, Washington, D.C.

Brown, D. J. D., et al.
1959. A classification of Montana fishing streams - 1959. Stream Classification Committee.

Burk, Dale A.
1970 Rock Creek drainage plans, get critical eye and the outdoor picture. The Missoulian, February 4, 1970.

Conklin, David G.
1972. User preferences for outdoor recreation: their implications for management of the Rattlesnake watershed. Unpublished masters thesis, University of Montana, Missoula.

Craik, Kenneth H.
1970. A system of landscape dimensions: appraisal of its objectivity and illustration of its scientific application. Report to Resources for the Future Inc., by University of California Institute of Personality Assessment and Res., Berkeley.

Hendee, John C., Richard P. Gale and William R. Catton, Jr.
1971. A typology of outdoor recreation activity preferences. The Journal of Environmental Education, Vol. 3, Number 1.

Jacobs, Peter and Douglas Way
1969. How much development can landscape absorb? Landscape Architecture Quarterly, July, 1969.

Küchler, A. W.
1964. Potential vegetation of the conterminous United States. American Geographical Society, Special Publication No. 36, 116 p., with map.

Lacate, D. S.
1969. Guidelines for bio-physical land classification, for classification of forest lands and associated wildlands, Minister of Fisheries and Forestry, Ottawa.

Litton, R. Burton, Jr.
1968. Forest landscape description and inventories - a basis for land planning and design. U.S.D.A. Forest Service, Pacific Southwest Forest and Range Experiment Station, Berkley, Calif.

Lynch, Kevin
1960. The image of the city. The MIT Press, Cambridge, Mass.

Morrison, Gary G.
1973. Rock and surficial deposits of the Bitterroot and Lolo National Forests. Unpublished report, U.S. Department of Agriculture, Forest Service, Hamilton, Montana.

Perry, Eugene S.
1962. Montana in the geologic past. Montana Bureau of Mines and Geology, Butte, Montana.

Peterson, Stan
1973. Personal communication. Soil Scientist, Lolo National Forest, Missoula, Montana.

Reimers, Mark A.
1973. Involving the public in the land planning of the Rock Creek drainage. Unpublished masters thesis, Cornell University.

Research Planning and Design Associates, Inc.
1967. Study of visual and cultural environment. North Atlantic Water Resources Study, Amherst, Mass., November 1967.

Ross, Clyde P.
1963. The Belt Series in Montana. Geologic Survey Professional Paper 346, U.S. Government Printing Office, Washington, D. C.

_____, David A. Andrews and Irwing J. Witking
1955. Geologic map of Montana. Montana Bureau of Mines and Geology, Helena, Montana.

Shaefer, Elwood L., Jr., et al.
1969. Natural landscape preferences: a predictive model. Journal of Leisure Research, Vol. 1, Number 1, pp. 1-19.

Thornbury, W. D.
1965. Regional geomorphology of the United States. John Wiley and Sons, Inc., New York.

U. S. Forest Service.
Undated. Forest service management direction (proposed)--lower Rock Creek drainage. Lolo National Forest, Missoula, Montana. (Actually printed June 1970.)

_____.
1967. Bonita ranger district multiple use plan. Lolo National Forest, Missoula, Montana.

_____.
1969. Coordinated resource management plan--Rock Creek area. Bonita Ranger District, Lolo National Forest (rough draft), Missoula, Montana.

_____.
1971[A]. Coordinating requirements for the Rock Creek drainage. Deerlodge and Lolo National Forests, Missoula, Montana, May.

_____.
1971[B]. Forest landscape management. Volume 1, U.S. Department of Agriculture, Forest Service, Northern Region.

———.
1972[A]. Guidelines for development of unit plans, working draft II. Northern Region, U. S. Department of Agriculture, Missoula, Montana.

———.
1972[B]. Soil survey, St. Regis-Ninemile area, Montana, Lolo National Forest, U.S. Dept. of Agriculture, Forest Service, Northern Region, Missoula, Montana.

———.
1973[A]. Ecoclass - a method for classifying ecosystems. U.S. Dept. of Agriculture, Forest Service PNW, 52 p.

———.
1973[B]. Recreation opportunity inventory (draft. U.S. Dept. of Agriculture, Forest Service, Northern Region.

———.
1973[C]. National forest landscape management, Vol. 1. Forest Service, U.S. Dept. of Agriculture, February.

U. S. Geological Survey
1972. Catalog of information on water data, U.S. Dept. of Interior. Office of Water Data Coordination, Washington, D. C.

Wertz, W. A., and J. A. Arnold
1972. Land systems inventory. U.S. Dept. of Agriculture, Forest Service, Intermountain Region, Ogden, Utah.

Zube, Ervin H.
1973. Rating everyday rural landscapes of the northeastern United States. Landscape Architecture Quarterly, July 1973.

APPENDIX A

SUMMARY MATRIX SHEETS

SUMMARY MATRIX

STUDY AREA: ROCK CREEK

SUBSECTION: CC-76E-01

SHEET: 1 OF 1

APPENDIX A

	RECREATIONAL LAND UNITS																		
SCENERY RATING: VERY HIGH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
DIC RATING: AVERAGE	AD-1-F	G-3-P	GD-2-F	GD-2-F	GD-2-F	G-3-AD	G-3-F	F-2-MF	AD-1-F	G-3-P	GD-2-F	G-2-F	AD-1-F	G-3-F	GD-2-F	G-3-F	F-2-F	GD-2-MF	F-2-F
TOTAL ACREAGE: 71,232																			
CLASSIF. AREA	W	W	W	W	W	W	W	O	O	O	R/W	W	O	R/W	R/W	W	O	W	O
ACCESS: HIGHWAY	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
ACCESS: GRAVEL RD.	O	O	O	O	O	O	O	0.41	7.87	O	0.16	O	7.81	0.08	0.30	O	O	1.47	1.34
ACCESS: TRAIL	9.38	1.49	2.40	2.06	O	0.54	O	O	O	O	1.51	1.34	O	0.53	1.10	0.33	O	3.68	O
DEV. REC. SITES	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
ARCH-HIST. SITES	O	O	O	O	O	O	O	O	O	O	O	O	2.60	O	O	O	O	O	O
PERENNIAL STRM	9.38	0.74	2.40	2.88	2.93	0.11	0.91	0.69	7.81	O	2.00	O	9.11	0.15	2.00	0.83	0.50	4.23	O
LAKES	O	O	3.61	O	O	6.95	2.18	O	O	O	10.14	O	O	0.15	O	0.66	O	O	O
VISUAL IMPACTS	O	O	O	O	O	O	O	M	O	O	O	O	O	O	O	O	M	M	O
AUDIAL IMPACTS	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
UNIQUE VEG.	O	O	O	O	O	✓	O	O	O	O	O	O	O	O	O	O	O	O	O
UNIQUE ANIMALS	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O	O
UNIQUE GEOL.	O	O	O	O	O	✓	O	O	O	O	Δ	O	O	O	O	O	O	O	O
OUTSTAND. VIEWS	O	✓	✓	✓	✓	✓	✓	✓	O	✓	✓	✓	O	✓	✓	✓	✓	✓	✓
RLU ACREAGE	320	1344	896	2432	512	18,560	2176	3584	1920	896	11,680	2240	3584	1920	4992	3008	2048	512	1344
RECREATION PROJECT: APPRECIATIVE SYMBOLIC	○	○	⊕	⊕	⊕	○	○	⊕	○	○	⊕	○	○	○	⊕	○	⊕	⊕	⊕
RECREATION PROJECT: EXTRACTIVE SYMBOLIC	○	○	⊕	⊕	⊕	○	⊕	○	○	○	⊕	○	○	○	○	○	○	⊕	○
RECREATION PROJECT: SOCIABLE LEARNING	●	●	◍	◍	◍	⊕	⊕	○	●	●	⊕	●	●	●	◍	●	○	○	○
RECREATION PROJECT: PASSIVE FREE PLAY	⊕	⊕	●	●	●	○	○	○	⊕	⊕	○	⊕	⊕	⊕	●	⊕	○	○	○
RECREATION PROJECT: ACTIVE EXPRESSIVE	⊕	⊕	●	●	●	○	○	○	⊕	⊕	○	⊕	⊕	⊕	●	⊕	○	○	○

CAPABILITY CLASS

SUITABILITY CLASS
- ○ MOST
- ⊕ MOD.
- ◍ LEAST

ACREAGE TOTALS BY CAPABILITY AND SUITABILITY CLASSES

●	⊕	◍
43,008	28,224	-0-
57,536	7232	6464
14,480	46,752	-0-
60,864	10,368	-0-
896	7232	63104
576	4992	65664
-0-	1440	69,792
992	-0-	61440
544	33,056	37,632
23104	3520	44608

SUMMARY MATRIX

STUDY AREA	SUBSECTION	SHEET	APPENDIX
ROCK CREEK	6C-76E-02	1 OF 1	A

SCENERY RATING: VERY HIGH
DIC RATING: AVERAGE
TOTAL ACREAGE: 11,072

RECREATIONAL LAND UNITS

	1	2	3	4
	AD-1-F	GD-3-F	G-3-F	G-3-AD
CLASSIF. AREA	R	R	R	R
ACCESS: HIGHWAY	0	0	0	0
ACCESS: GRAVEL RD.	0	0	0	0
ACCESS: TRAIL	12.50	0.28	0.17	0.16
DEV. REC. SITES	0	0	0	0
ARCH-HIST. SITES	0	0	0	0
PERENNIAL STRM	12.50	0.84	0.69	0.16
LAKES	0	0	0.69	0
VISUAL IMPACTS	0	0	0	0
AUDIAL IMPACTS	0	0	0	0
UNIQUE VEG.	0	0	0	0
UNIQUE ANIMALS	0	0	0	0
UNIQUE GEOL.	0	0	0	0
OUTSTAND. VIEWS	✓	✓	✓	✓
RLU ACREAGE	320	1792	5760	3520

CAPABILITY CLASS

SUITABILITY CLASS
- ○ MOST
- ⊕ MOD.
- ◍ LEAST

ACREAGE TOTALS BY CAPABILITY AND SUITABILITY CLASSES

RECREATION TYPOLOGY

	○	⊕	◍
APPRECIATIVE SYMBOLIC	9280	1792	-0-
	11,072	-0-	-0-
EXTRACTIVE SYMBOLIC	3520	5760	1792
	11,072	-0-	-0-
SOCIABLE LEARNING	320	-0-	10,752
	0	0	11,072
PASSIVE FREE PLAY	-0-	320	10,752
	-0-	-0-	11,072
ACTIVE EXPRESSIVE	-0-	320	10,752
	11,072	-0-	-0-

SUMMARY MATRIX

STUDY AREA: ROCK CREEK

SUBSECTION: 6C-76E-03

SHEET: 10=1

APPENDIX A

SCENERY RATING: LOW

DIC RATING: AVERAGE

TOTAL ACREAGE: 49,536

	RECREATIONAL LAND UNITS																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	
	AD-1-E	F-1-E	F-1-ME	F-2-E	F-2-AD	AD-1-E	F-2-E	GD-2-E	F-1-D	F-2-E	GD-1-E	GD-1-ME	R-3-E	R-2-E	R-3-AD	R-3-E	F-2-ME	GD-2-E	GD-2-E	
CLASSIF. AREA	0	0	0	R/	0	0	R	R.	R/	0	0	0	R/	R	R	R	0	R	R	
ACCESS: HIGHWAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ACCESS: GRAVEL RD.	7.81	2.40	3.91	.08	0	0	0	0	1.64	1.30	0	1.56	0	0	0	0	1.56	0	0	
ACCESS: TRAIL	0	0.20	0	0.47	1.56	4.69	0.27	2.49	0.82	0	1.12	3.13	0	0.46	0	0	0.52	0	0	
DEV. REC. SITES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ARCH-HIST. SITES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PERENNIAL STRM	7.81	3.00	3.91	0.62	0	7.81	0.27	4.76	0	0	2.23	0	0	0	0	0	2.08	0	0	
LAKES	0	0	0	0.31	0	0	0	17.05	0	0	160.71	0	0	0	0	0	0	0	0	
VISUAL IMPACTS	0	0	L	0	0	0	0	0	0	0	0	M	0	0	0	0	0	0	0	
AUDIAL IMPACTS	0	M	M	0	0	0	0	0	M	M	0	0	0	0	0	M	M	0	0	
UNIQUE VEG.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
UNIQUE ANIMALS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
UNIQUE GEOL.	0	0	0	✓	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
OUTSTAND. VIEWS	0	0	0	0	0	✓	0	✓	0	0	0	0	✓	✓	✓	✓	0	0	0	
RLU ACREAGE	191	1440	512	1004	1280	640	3801	1406	1216	384	448	320	191	1088	256	128	960	191	128	

CAPABILITY CLASS

SUITABILITY CLASS

- ○ MOST
- ⊕ MOD.
- ◍ LEAST

ACREAGE TOTALS BY CAPABILITY AND SUITABILITY CLASSES

RECREATION TYPOLOGY	○	⊕	◍
APPRECIATIVE SYMBOLIC	1991	11,544	-0-
EXTRACTIVE SYMBOLIC	1856	45312	2368
SOCIABLE LEARNING	6462	43.5%	-0-
PASSIVE FREE PLAY	45888	3648	-0-
ACTIVE EXPRESSIVE	5824	40448	3264
	192	5568	43%
	2048	4736	42.5%
	192	5888	43456
	3008	45952	576
	48640	39.6	-0-

SUMMARY MATRIX

STUDY AREA: ROCK CREEK

SUBSECTION: 6C-76E-04

SHEET: 1 OF 3

APPENDIX A

SCENERY RATING: AVERAGE

DIC RATING: HIGH

TOTAL ACREAGE: 100,480

RECREATIONAL LAND UNITS	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	AD-1-G	AD-1-ME	AD-1-P	F-2-P	F-2-G	F-2-MF	F-2-MF	F-2-F	F-3-P	F-2-AP	F-2-F	GD-1-F	AD-1-F	F-2-F	F-2-F	GD-2-F	GD-1-P	GD-1-F	F-2-P	GD-2-MF
CLASSIF. AREA	0	0	0	0	0	0	0	0	0	0	0	0	0	R/	0	R/	0	0	0	0
ACCESS: HIGHWAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ACCESS: GRAVEL RD.	1.74	5.04	0.60	5.21	0	0.47	0	0	0	0.78	0.43	2.93	1.95	0	1.56	0	0	0	0	1.36
ACCESS: TRAIL	0	0	0	0	0	0	0	0.25	0	0	0	0	1.95	0.51	0	1.14	1.95	2.34	0	0
DEV. REC. SITES	0.13	0.50	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARCH-HIST. SITES	0	0	0	0	0.21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PERENNIAL STRM	3.80	4.54	8.41	0	0.11	0.19	0	0.50	0.98	0	0.14	1.95	7.81	0.06	0	2.21	3.91	3.13	0	1.36
LAKES	0	0	1.20	0	0	0.56	0	0	0	1.56	0	0	0	0	0	2.51	0	0	0	0
VISUAL IMPACTS	L	L	0	0	0	M	M	0	0	0	0	0	0	0	0	0	0	0	0	M
AUDIAL IMPACTS	M	M	L	M	0	L	M	M	M	M	0	0	0	0	M	L	0	0	0	M
UNIQUE VEG.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UNIQUE ANIMALS	0	0	0	0	0	✓	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UNIQUE GEOL.	0	✓	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OUTSTAND. VIEWS	✓	0	✓	0	0	0	0	0	0	✓	0	0	✓	0	0	0	0	0	0	0
RLU ACREAGE	7680	1984	8992	192	4672	8576	5760	9760	512	1280	6912	512	1536	8896	3840	2048	1536	640	1536	4224

CAPABILITY CLASS

SUITABILITY CLASS

- ⊙ MOST
- ⊕ MOD.
- ◍ LEAST

ACREAGE TOTALS BY CAPABILITY AND SUITABILITY CLASSES

RECREATION THEOLOGY				
APPRECIATIVE SYMBOLIC	19,764	81,216	- 0 -
	2624	40320	57536
EXTRACTIVE SYMBOLIC	31,552	60,608	8320
	49,984	50,496	- 0 -
SOCIABLE LEARNING	22,272	59,456	18,752
	21,696	24256	54528
PASSIVE FREE PLAY	16448	35[illegible]	48704
	38,208	- 0 -	62272
ACTIVE EXPRESSIVE	46720	45440	8320
	82240	18,240	- 0 -

SUMMARY MATRIX

STUDY AREA ROCK CREEK.

SUBSECTION CC-76E-04

SHEET 2 OF 3

APPENDIX A

SCENERY RATING	RECREATIONAL LAND UNITS																			
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
DIC RATING	AD-1-ME	E-3-E	E-2-E	GD-1-E	AD-1-E	GD-1-E	E-2-D	E-2-E	E-2-D	GD-1-G	E-2-G	GD-1-G	E-2-ME	GD-2-E	GD-2-D	GD-1-G	GD-1-E	GD-1-E	AD-1-E	GD-2-D
TOTAL ACREAGE																				
CLASSIF. AREA	0	0	0	0	0	0	0	R/	0	0	0	0	0	0	0	0	0	0	0	
ACCESS: HIGHWAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ACCESS: GRAVEL RD.	0	0	0	0	0	3.91	0	0	1.04	3.00	0.52	0	0.10	0	0	0	0.65	1.95	1.74	3.35
ACCESS: TRAIL	0	0	0	0	0	0	0	0.71	0.52	0	0	0	0.58	0	0	0	0	0	0	
DEV. REC. SITES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.74	1.12
ARCH-HIST. SITES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
PERENNIAL STRM	15.63	0	0	0	5.21	0	0	0.18	0	0	0	5.21	0	1.88	0	0.49	0	1.95	7.81	0.56
LAKES	0	0	0	0	0	0	0	0	0	4.91	0	0	0	75	0	0	0	0	0	22.32
VISUAL IMPACTS	L	0	0	0	0	0	0	0	0	0	0	0	M	0	0	0	0	0	0	0
AUDIAL IMPACTS	M	M	M	M	M	M	M	0	0	M	M	M	0	M	M	M	M	M	M	M
UNIQUE VEG.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UNIQUE ANIMALS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UNIQUE GEOL.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OUTSTAND. VIEWS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	✓	✓
RLU ACREAGE	640	320	320	192	192	1,280	640	1,344	960	992	960	192	1,280	1,600	320	1,024	768	1,536	576	896

RECREATION TYPOLOGY

- APPRECIATIVE SYMBOLIC
- EXTRACTIVE SYMBOLIC
- SOCIABLE LEARNING
- PASSIVE FREE PLAY
- ACTIVE EXPRESSIVE

CAPABILITY CLASS

SUITABILITY CLASS

- ⊙ MOST
- ⊕ MOD.
- ◍ LEAST

ACREAGE TOTALS BY CAPABILITY AND SUITABILITY CLASSES

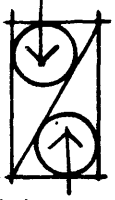
SUMMARY MATRIX

STUDY AREA ROCK CREEK | **SUBSECTION** 6C-76E-04 | **SHEET** 30F3 | APPENDIX A

RECREATIONAL LAND UNITS

	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59
SCENERY RATING																			
DIC RATING	GD-2-H	GD-1-G	E-2-G	E-3-P	E-3-H	E-2-MF	E-2-D	AD-1-E	E-2-MF	E-2-G	E-2-D	E-2-H	E-2-E	E-2-G	E-2-G	E-2-H	E-2-H	E-3-H	AD-1-G
TOTAL ACREAGE																			
CLASSIF. AREA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ACCESS: HIGHWAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ACCESS: GRAVEL RD.	0	2.78	0	0	0	0	0	7.81	0.63	1.12	0.56	0	0.84	0	1.53	0	0	0	4.26
ACCESS: TRAIL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.71
DEV. REC. SITES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.42
ARCH-HIST. SITES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PERENNIAL STRM	0	0	0	0	0	0	0	7.81	1.80	0	0	0	0	0	0	0	0	0	2.13
LAKES	0	4.56	0	0	0	0	1.95	0	1.20	0	0	0	0	0	0	0	0	9.77	710.2
VISUAL IMPACTS	0	0	0	0	0	M	0	0	L	0	0	0	0	0	0	0	0	0	0
AUDIAL IMPACTS	M	M	M	M	M	0	0	0	0	M	M	0	M	M	M	M	M	M	M
UNIQUE VEG.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UNIQUE ANIMALS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UNIQUE GEOL.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OUTSTAND. VIEWS	0	✓	✓	0	0	0	0	0	0	0	0	0	0	0	✓	✓	✓	0	✓
RLU ACREAGE	160	3074	2176	640	1408	1728	2560	2560	0992	8896	0896	23040	9584	3200	35584	1920	1920	512	704
RECREATION THEORY: APPRECIATIVE SYMBOLIC	⊕	⊕	⊕	○	⊕	⊕	○	⊕	⊕	⊕	○	⊕	⊕	○	⊕	⊕	⊕	⊕	○
RECREATION THEORY: EXTRACTIVE SYMBOLIC	⊕	⊕	⊕	○	⊕	⊕	○	⊕	⊕	⊕	○	⊕	⊕	○	⊕	⊕	⊕	⊕	○
RECREATION THEORY: SOCIABLE LEARNING	○	⊕	⊕	⊕	○	⊕	⊕	○	⊕	○	⊕	○	⊕	⊕	○	⊕	○	⊕	⊕
RECREATION THEORY: PASSIVE FREE PLAY	○	○	⊕	⊕	⊕	⊕	⊕	⊕	○	○	○	⊕	⊕	⊕	⊕	⊕	⊕	○	○
RECREATION THEORY: ACTIVE EXPRESSIVE	⊕	○	○	⊕	⊕	○	⊕	○	⊕	○	○	⊕	⊕	⊕	⊕	○	⊕	○	○

CAPABILITY CLASS



SUITABILITY CLASS

- ○ MOST
- ⊕ MOD.
- ◍ LEAST

ACREAGE TOTALS BY CAPABILITY AND SUITABILITY CLASSES

SUMMARY MATRIX

STUDY AREA ROCK CREEK | **SUBSECTION** 6C-76E-05 | **SHEET** 1 OF 1 | APPENDIX A

SCENERY RATING: VERY HIGH
DIC RATING: AVERAGE
TOTAL ACREAGE: 17,280

RECREATIONAL LAND UNITS

	1	2	3	4	5	6	7	8	9
	AD-1-E	F-3-D	F-3-E	F-2-E	GD-2-E	G-3-AP	F-3-E	F-2-E	F-2-WE
CLASSIF. AREA	R	R	R	R	R	R	R	O	O
ACCESS: HIGHWAY	O	O	O	O	O	O	O	O	O
ACCESS: GRAVEL RD.	O	O	O	O	O	O	O	O	1.84
ACCESS: TRAIL	3.13	O	O	O	O	0.76	O	1.56	O
DEV. REC. SITES	O	O	O	O	O	O	O	O	1.42
ARCH-HIST. SITES	O	O	O	O	O	O	O	O	O
PERENNIAL STRM	7.03	O	0.48	O	2.93	0.42	O	0.22	2.13
LAKES	O	O	O	O	O	4.54	O	O	7.10
VISUAL IMPACTS	O	O	O	O	O	O	O	O	M
AUDIAL IMPACTS	O	O	O	O	O	O	O	M	M
UNIQUE VEG.	O	O	O	O	O	O	O	O	O
UNIQUE ANIMALS	O	O	O	O	O	✓	O	O	O
UNIQUE GEOL.	O	O	O	O	O	O	O	O	O
OUTSTAND. VIEWS	O	O	O	O	O	✓	O	O	O
RLU ACREAGE	640	448	3136	2176	512	3854	1472	1240	704

CAPABILITY CLASS

SUITABILITY CLASS
- ⊙ MOST
- ⊕ MOD.
- ◍ LEAST

ACREAGE TOTALS BY CAPABILITY AND SUITABILITY CLASSES

RECREATION TYPOLOGY

APPRECIATIVE SYMBOLIC	704	10240	-0-
	10240	6336	704
EXTRACTIVE SYMBOLIC	7296	5376	4608
	9536	7744	-0-
SOCIABLE LEARNING	17280	7936	6144
	-0-	704	16576
PASSIVE FREE PLAY	-0-	1792	15488
	704	-0-	16576
ACTIVE EXPRESSIVE	704	6016	10560
	8832	8448	-0-

SUMMARY MATRIX

STUDY AREA: ROCK CREEK

SUBSECTION: 6C-7GE-00

SHEET: 1 OF 1

APPENDIX A

SCENERY RATING: LOW

DIC RATING: HIGH

TOTAL ACREAGE: 13,632

RECREATIONAL LAND UNITS

	1	2	3	4	5	6
	F-3-D	F-2-G	F-3-D	F-2-E	F-2-ME	F-2-E
CLASSIF. AREA	0	0	0	0	0	0
ACCESS: HIGHWAY	0	0	0	0	0	0
ACCESS: GRAVEL RD.	0	0	0	0	0	0.12
ACCESS: TRAIL	0	0	0	0	0	0.65
DEV. REC. SITES	0	0	0	0	0	0
ARCH-HIST. SITES	0	0.37	0	0	0	0
PERENNIAL STRM	0	0	0	0	0	0.29
LAKES	0	0	0	0	0	0
VISUAL IMPACTS	0	0	0	0	M	0
AUDIAL IMPACTS	M	M	0	0	0	0
UNIQUE VEG.	0	0	0	0	0	0
UNIQUE ANIMALS	0	0	0	0	0	0
UNIQUE GEOL.	0	0	✓	0	0	✓
OUTSTAND. VIEWS	0	✓	0	0	0	✓
RLU ACREAGE	38A	1,088	10A	14A	57G	85%

CAPABILITY CLASS

SUITABILITY CLASS
- O MOST
- ⊕ MOD.
- ◍ LEAST

ACREAGE TOTALS BY CAPABILITY AND SUITABILITY CLASSES

RECREATION THEOLOGY

APPRECIATIVE SYMBOLIC	1408	11224	-0-
	-0-	9984	3648
EXTRACTIVE SYMBOLIC	576	13056	-0-
	9088	4544	
SOCIABLE LEARNING	-0-	12944	688
	-0-	-0-	13632
PASSIVE FREE PLAY	-0-	4672	8960
	-0-	-0-	13632
ACTIVE EXPRESSIVE	3264	10368	-0-
	9088	1856	2688

SUMMARY MATRIX	STUDY AREA	SUBSECTION	SHEET	APPENDIX A
	ROCK CREEK	6C-76E-07	1 OF 1	

SCENERY RATING: LOW

DIC RATING: HIGH

TOTAL ACREAGE: 5,632

RECREATIONAL LAND UNITS	1	2	3	4	5
	F-3-P	F-2-MF	F-3-F	F-3-F	F-3-P
CLASSIF. AREA	0	0	0	0	0
ACCESS – HIGHWAY	0	0	0	0	0
ACCESS – GRAVEL RD.	0	0	0	0	0
ACCESS – TRAIL	0	0	0	0	0
DEV. REC. SITES	0	0	0	0	0
ARCH-HIST. SITES	0	0	0	0	0
PERENNIAL STRM	0	0	0	0	0
LAKES	0	0	0	0	0
VISUAL IMPACTS	0	M	0	0	0
AUDIAL IMPACTS	M	M	M	0	M
UNIQUE VEG.	0	0	0	0	0
UNIQUE ANIMALS	0	0	0	0	0
UNIQUE GEOL.	0	0	0	0	0
OUTSTAND. VIEWS	0	0	0	0	0
RLU ACREAGE	192	2048	448	384	2560

CAPABILITY CLASS (upper circle) / SUITABILITY CLASS (lower circle)

SUITABILITY CLASS: O MOST · ⊕ MOD. · ● LEAST

RECREATION TYPOLOGY		1	2	3	4	5
APPRECIATIVE SYMBOLIC	Capability	O	⊕	⊕	⊕	O
	Suitability	●	●	●	⊕	●
EXTRACTIVE SYMBOLIC	Capability	⊕	O	●	●	⊕
	Suitability	⊕	O	⊕	⊕	⊕
SOCIABLE LEARNING	Capability	⊕	⊕	⊕	⊕	⊕
	Suitability	●	●	●	●	●
PASSIVE FREE PLAY	Capability	⊕	⊕	●	●	⊕
	Suitability	●	●	●	●	●
ACTIVE EXPRESSIVE	Capability	⊕	O	●	●	⊕
	Suitability	⊕	O	⊕	⊕	⊕

ACREAGE TOTALS BY CAPABILITY AND SUITABILITY CLASSES

		O	⊕	●
APPRECIATIVE SYMBOLIC	Capability	2752	2880	-0-
	Suitability	-0-	384	5248
EXTRACTIVE SYMBOLIC	Capability	2048	2752	832
	Suitability	2048	3584	-0-
SOCIABLE LEARNING	Capability	-0-	5632	-0-
	Suitability	-0-	-0-	5632
PASSIVE FREE PLAY	Capability	-0-	4800	832
	Suitability	-0-	-0-	5632
ACTIVE EXPRESSIVE	Capability	2048	2752	832
	Suitability	2048	3584	

SUMMARY MATRIX

STUDY AREA: ROCK CREEK

SUBSECTION: 6C-76E-03

SHEET: 1 OF 1

APPENDIX A

	RECREATIONAL LAND UNITS															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
SCENERY RATING LOW																
DIC RATING HIGH																
TOTAL ACREAGE 29,056	AD-1-G	E-3-G	E-2-G	E-3-G	E-3-G	E-3-P	E-2-G	E-3-P	E-3-G	E-3-E	R-2-G	E-2-P	E-2-E	E-2-G	E-2-P	E-3-G
CLASSIF. AREA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ACCESS: HIGHWAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ACCESS: GRAVEL RD.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.25
ACCESS: TRAIL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DEV. REC. SITES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARCH-HIST. SITES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PERENNIAL STRM	2.93	0	0	0	0	2.44	0	2.88	0.30	0	0	0.56	0.22	0	0.63	0.08
LAKES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VISUAL IMPACTS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AUDIAL IMPACTS	M	M	0	M	M	0	0	0	M	M	0	0	0	M	M	M
UNIQUE VEG.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UNIQUE ANIMALS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UNIQUE GEOL.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OUTSTAND. VIEWS	0	0	✓	0	0	0	✓	0	✓	0	✓	0	0	0	0	✓
RLU ACREAGE	512	576	5552	1088	640	1024	11232	12176	1664	704	12304	896	11440	704	1600	5952
RECREATION TYPOLOGY: APPRECIATIVE SYMBOLIC	⊙	⊕	⊕	⊕	⊕	⊙	⊕	⊙	⊕	⊕	⊙	⊙	⊕	⊙	⊕	⊕
RECREATION TYPOLOGY: EXTRACTIVE SYMBOLIC	⊙	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊙	⊕	⊕	⊕	⊕
RECREATION TYPOLOGY: SOCIABLE LEARNING	⊙	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊙	⊕	⊕	⊕	⊕
RECREATION TYPOLOGY: PASSIVE FREE PLAY	⊙	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊙	⊕	⊕	⊕	⊕
RECREATION TYPOLOGY: ACTIVE EXPRESSIVE	⊙	⊕	⊕	⊕	⊕	⊙	⊕	⊙	⊕	⊕	⊙	⊙	⊕	⊙	⊕	⊕

CAPABILITY CLASS

SUITABILITY CLASS
- ⊙ MOST
- ⊕ MOD.
- ◍ LEAST

ACREAGE TOTALS BY CAPABILITY AND SUITABILITY CLASSES

⊙	⊕	◍
7552	21504	-0-
-0-	19392	9664
5312	13120	10624
-0-	29056	-0-
512	7680	20864
-0-	5952	23104
512	25,600	2944
-0-	-0-	29056
13952	14400	704
5952	23104	-0-

SUMMARY MATRIX

STUDY AREA: ROCK CREEK

SUBSECTION: CC-TOE-09

SHEET: 1 OF 1

APPENDIX A

SCENERY RATING AVERAGE

DIC RATING AVERAGE

TOTAL ACREAGE 11,520

RECREATIONAL LAND UNITS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	E-2-D	E-3-D	E-3-P	E-3-E	E-3-P	E-3-P	E-3-E	E-3-P	E-3-P	E-3-E	R-2-P	R-2-E	R-2-P	R-2-E	R-2-P	R-2-E
CLASSIF. AREA	0	0	0	R/	R	R	R	R	R	R	R	R	R	R	R	R/
ACCESS: HIGHWAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ACCESS: GRAVEL RD.	1.12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ACCESS: TRAIL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DEV. REC. SITES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARCH-HIST. SITES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PERENNIAL STRM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LAKES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VISUAL IMPACTS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AUDIAL IMPACTS	M	M	M	0	0	0	0	0	0	0	0	0	0	0	0	0
UNIQUE VEG.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UNIQUE ANIMALS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UNIQUE GEOL.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OUTSTAND. VIEWS	✓	0	0	0	0	0	0	0	0	0	0	0	0	0	0	✓
RLU ACREAGE	1792	320	512	384	256	192	320	384	384	1600	512	320	192	192	128	1920

CAPABILITY CLASS

SUITABILITY CLASS

○ MOST

⊕ MOD.

◍ LEAST

ACREAGE TOTALS BY CAPABILITY AND SUITABILITY CLASSES

RECREATION TYPOLOGY	○	⊕	◍
APPRECIATIVE SYMBOLIC	4096	7424	-0-
EXTRACTIVE SYMBOLIC	-0-	8832	2688
SOCIABLE LEARNING	11304	3584	5632
PASSIVE FREE PLAY	-0-	11,520	-0-
ACTIVE EXPRESSIVE	-0-	9408	2112
	-0-	1792	9728
	-0-	4736	6784
	1792	-0-	9728
	1664	3584	5312
	1792	9728	-0-

SUMMARY MATRIX

STUDY AREA ROCK CREEK

SUBSECTION 6C-76E-10

SHEET 1 OF 1

APPENDIX A

SCENERY RATING: HIGH

DIC RATING: HIGH

TOTAL ACREAGE: 48.004

RECREATIONAL LAND UNITS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	AD-1-G	AD-1-MF	E-2-G	E-3-G	E-2-G	E-3-P	E-2-MF	E-2-E	E-2-MF	E-3-E	E-3-P	E-3-E	E-2-G	E-3-P	E-2-G	E-1-G	E-2-G	E-3-P
CLASSIF. AREA	0	0	0	0	0	0	0	R/	0	R	R/	R/	0	0	0	0	0	0
ACCESS: HIGHWAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ACCESS: GRAVEL RD.	4.46	3.78	0	0	0	0	0	0.10	0	0	0	0.14	0	0	0.74	1.42	0	0
ACCESS: TRAIL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DEV. REC. SITES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARCH-HIST. SITES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PERENNIAL STRM	5.21	3.78	0.65	0	0	0	0.18	0.44	1.38	0	0	0.49	0	0	0	1.42	0.18	0
LAKES	0	0	0	0	0	0	0	0	0	4.26	0	0	0	0	0	0	0	0
VISUAL IMPACTS	0	M	0	0	0	0	M	0	M	0	0	0	0	0	0	0	0	0
AUDIAL IMPACTS	M	M	M	M	M	M	0	0	0	0	0	M	M	M	M	M	M	M
UNIQUE VEG.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UNIQUE ANIMALS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UNIQUE GEOL.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	✓	0
OUTSTAND. VIEWS	✓	0	✓	0	0	0	✓	✓	0	✓	0	✓	0	0	0	0	0	0
RLU ACREAGE	1344	1984	12304	384	320	640	2752	24960	1088	704	1152	12480	12480	384	1344	1408	2752	320

CAPABILITY CLASS

SUITABILITY CLASS

⊙ MOST

⊕ MOD.

◍ LEAST

ACREAGE TOTALS BY CAPABILITY AND SUITABILITY CLASSES

RECREATION TYPOLOGY

APPRECIATIVE SYMBOLIC	5632	46432	-0-
	2564	17984	4416
EXTRACTIVE SYMBOLIC	3520	36023	3136
	10624	3440	-0-
SOCIABLE LEARNING	7936	36864	7104
	4800	33323	39936
PASSIVE FREE PLAY	7936	15616	6912
	3328	-0-	39936
ACTIVE EXPRESSIVE	17664	12643	17536
	11200	36864	-0-

SUMMARY MATRIX

STUDY AREA: ROCK CREEK

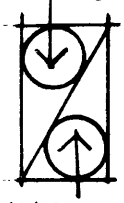
SUBSECTION: 6J-76E-11

SHEET: 1 OF 1

APPENDIX A

		RECREATIONAL LAND UNITS										
		1	2	3	4	5	6	7	8	9	10	11
SCENERY RATING AVERAGE												
DIC RATING AVERAGE		AD-1-H	E-3-P	E-3-H	E-3-P	E-3-H	E-5-H	E-3-H	E-3-P	E-3-P	E-3-P	E-3-MP
TOTAL ACREAGE 15,744												
CLASSIF. AREA		0	0	0	B/	B/	R	R	R	R	0	B/
ACCESS	HIGHWAY	0	0	0	0	0	0	0	0	0	0	0
	GRAVEL RD.	6.25	0	0	0	0	0	0	0	0	0	0
	TRAIL	1.56	0	0	0	0	0	0.15	0	0	0	0
DEV. REC. SITES		0	0	0	0	0	0	0	0	0	0	0
ARCH-HIST. SITES		0	0	0	0	0	0	0	1.74	0	0	0
PERENNIAL STRM		8.59	0	0.47	0	0.72	0	0.45	2.60	0	0	0.60
LAKES		0	0	0	0	0	0	0	0	0	0	0
VISUAL IMPACTS		0	0	M	0	0	0	0	0	0	0	M
AUDIAL IMPACTS		0	0	0	0	0	0	0	M	M	M	0
UNIQUE VEG.		0	0	0	0	0	0	0	0	0	0	0
UNIQUE ANIMALS		0	0	0	0	0	0	0	0	0	0	0
UNIQUE GEOL.		0	0	0	0	0	0	0	0	0	0	0
OUTSTAND. VIEWS		0	0	0	0	0	✓	0	0	0	0	0
RLU ACREAGE		640	832	2112	192	3456	2176	8320	5760	640	5760	832
RECREATION TYPOLOGY	APPRECIATIVE SYMBOLIC	⊙	○	⊕	⊙	⊕	⊕	⊕	○	○	○	⊕
	EXTRACTIVE SYMBOLIC	⊙	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
	SOCIABLE LEARNING	⊙	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
	PASSIVE FREE PLAY	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕	⊕
	ACTIVE EXPRESSIVE	⊙	⊕	⊕	⊕	⊕	⊕	○	⊕	⊕	⊕	⊕

CAPABILITY CLASS



SUITABILITY CLASS

- ○ MOST
- ⊕ MOD.
- ◍ LEAST

ACREAGE TOTALS BY CAPABILITY AND SUITABILITY CLASSES

3824	10480	-0-
-0-	11,136	4608
640	6203	3320
3968	11,776	-0-
640	13124	-0-
640	-0-	15104
-0-	4096	11648
640	-0-	15104
-0-	6343	8961
4800	10368	576

SUMMARY MATRIX

STUDY AREA: ROCK CREEK

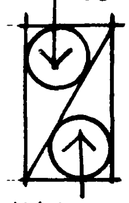
SUBSECTION: GC-76E-12

SHEET: 1 OF 1

APPENDIX A

	RECREATIONAL LAND UNITS				
SCENERY RATING: LOW	1	2	3	4	5
DIC RATING: HIGH; TOTAL ACREAGE: 10,560	F-3-F	F-3-F	F-2-F	GD-2-F	R-2-F
CLASSIF. AREA	R	R	R	R	R
ACCESS – HIGHWAY	0	0	0	0	0
ACCESS – GRAVEL RD.	0	0	0	0	0
ACCESS – TRAIL	0.24	0	1.42	0	0.68
DEV. REC. SITES	0	0	0	0	0
ARCH-HIST. SITES	0	0	0.20	0	0
PERENNIAL STRM	1.46	1.12	0.61	3.26	0
LAKES	0	0	0	0	0
VISUAL IMPACTS	0	0	0	0	0
AUDIAL IMPACTS	M	0	0	0	0
UNIQUE VEG.	0	0	0	0	0
UNIQUE ANIMALS	0	0	0	0	0
UNIQUE GEOL.	0	0	0	0	0
OUTSTAND. VIEWS	0	0	0	0	✓
RLU ACREAGE	2048	1344	4928	768	1472

CAPABILITY CLASS



SUITABILITY CLASS
- ⊙ MOST
- ⊕ MOD.
- ● LEAST

RECREATION TYPOLOGY (capability class above, suitability class below in each cell)

Recreation typology		1	2	3	4	5	ACREAGE TOTALS BY CAPABILITY AND SUITABILITY CLASSES: Most	Mod.	Least
APPRECIATIVE SYMBOLIC	Capability	Mod.	Mod.	Mod.	Mod.	Most	1472	9088	-0-
	Suitability	Mod.	Mod.	Mod.	Mod.	Mod.	-0-	10,560	-0-
EXTRACTIVE SYMBOLIC	Capability	Least	Least	Mod.	Mod.	Most	1472	5696	3392
	Suitability	Most	Mod.	Most	Mod.	Mod.	6976	3584	-0-
SOCIABLE LEARNING	Capability	Mod.	Mod.	Mod.	Least	Mod.	-0-	9792	768
	Suitability	Least	Least	Least	Least	Least	-0-	-0-	10,560
PASSIVE FREE PLAY	Capability	Least	Least	Least	Least	Least	-0-	-0-	10,560
	Suitability	Least	Least	Least	Least	Least	-0-	-0-	10,560
ACTIVE EXPRESSIVE	Capability	Least	Least	Mod.	Mod.	Mod.	-0-	7168	3392
	Suitability	Most	Mod.	Most	Mod.	Most	8448	2112	-0-

SUMMARY MATRIX

STUDY AREA: ROCK CREEK

SUBSECTION: 6C-76E-13

SHEET: 1 OF 2

APPENDIX A

SCENERY RATING: AVERAGE

DIC RATING: AVERAGE

TOTAL ACREAGE: 62,720

RECREATIONAL LAND UNITS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	AD-1-MF	E-3-P	R-2-P	E-3-MP	R-2-MP	R-3-MP	R-3-E	E-3-E	E-3-P	E-3-E	E-3-P	E-3-E	E-3-P	R-2-E	E-3-E	E-3-P	R-2-E	R-2-MF	R-3-MF	E-3-MF
CLASSIF. AREA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ACCESS: HIGHWAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ACCESS: GRAVEL RD.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ACCESS: TRAIL	0	0	0	0	0	0	1.42	0	0	0.66	0	0	0.95	2.43	0.49	0.79	0	0.87	0.78	0.52
DEV. REC. SITES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARCH-HIST. SITES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.26	0	0	0	0
PERENNIAL STRM	7.81	0.47	0	0.90	0	0	0	0.62	2.10	0.23	0	1.12	0	0	0.81	1.19	0	0	0	0.39
LAKES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VISUAL IMPACTS	L	0	0	S	S	S	0	0	0	0	0	0	0	0	0	0	0	S	S	S
AUDIAL IMPACTS	0	M	0	0	0	0	0	0	0	0	M	M	0	0	0	M	0	0	0	0
UNIQUE VEG.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UNIQUE ANIMALS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UNIQUE GEOL.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	✓	0	0	0	0	0
OUTSTAND. VIEWS	0	0	✓	0	✓	✓	✓	0	0	0	0	0	0	✓	✓	0	✓	✓	✓	0
RLU ACREAGE	128	2116	512	33728	704	2560	704	4864	16640	2176	576	1344	26624	7680	12288	35776	448	1152	640	3840

CAPABILITY CLASS

SUITABILITY CLASS

⊙ MOST

⊕ MOD.

◍ LEAST

ACREAGE TOTALS BY CAPABILITY AND SUITABILITY CLASSES

RECREATION TYPOLOGY	⊙	⊕	◍
APPRECIATIVE SYMBOLIC	29632	33088	-0-
	-0-	47168	15552
EXTRACTIVE SYMBOLIC	11072	26624	25024
	21696	41024	-0-
SOCIABLE LEARNING	128	58112	4736
	-0-	-0-	62720
PASSIVE FREE PLAY	128	29888	32704
	-0-	-0-	62720
ACTIVE EXPRESSIVE	5056	31936	25728
	2702	16960	18688

SUMMARY MATRIX

STUDY AREA ROCK CREEK

SUBSECTION CC-7.2E-13

SHEET 2 OF 2

APPENDIX A

RECREATIONAL LAND UNITS

	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
SCENERY RATING																
DIC RATING	E-3-E	E-3-E	E-3-E	R-2-ME	R-2-E	E-2-ME	R-2-ME	E-3-ME	E-3-ME	E-3-P	E-3-E	E-2-E	R-2-E	E-3-E	E-3-P	E-3-P
TOTAL ACREAGE																
CLASSIF. AREA	0	0	0	0	0	0	0	R	0	R	0	R	R	R	R	0
ACCESS: HIGHWAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ACCESS: GRAVEL RD.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ACCESS: TRAIL	0	0	1.56	2.23	0.87	0	0	0	0	0	0	0	0	0	0	0
DEV. REC. SITES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARCH-HIST. SITES	0	0	0	0	0	0	0	0	0	0.33	0	0	0	0.60	0	0
PERENNIAL STRM	0	2.93	0	0	0	1.20	0	0	1.12	1.50	0.43	0	0	1.50	1.38	0
LAKES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VISUAL IMPACTS	0	0	0	S	0	S	S	S	S	0	0	0	0	0	0	0
AUDIAL IMPACTS	0	M	M	0	0	0	0	0	0	0	0	0	0	0	M	M
UNIQUE VEG.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UNIQUE ANIMALS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UNIQUE GEOL.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OUTSTAND. VIEWS	0	0	0	✓	✓	0	✓	✓	0	0	0	✓	✓	0	0	0
RLU ACREAGE	704	512	320	896	1152	832	832	1088	448	3008	1152	1856	640	1408	1088	512

CAPABILITY CLASS

SUITABILITY CLASS
- ○ MOST
- ⊕ MOD.
- ◍ LEAST

ACREAGE TOTALS BY CAPABILITY AND SUITABILITY CLASSES

RECREATION PROJECT

- APPRECIATIVE SYMBOLIC
- EXTRACTIVE SYMBOLIC
- SOCIABLE LEARNING
- PASSIVE FREE PLAY
- ACTIVE EXPRESSIVE

SUMMARY MATRIX

STUDY AREA: ROCK CREEK

SUBSECTION: GC-76E-14

SHEET: 1 OF 3

APPENDIX A

	RECREATIONAL LAND UNITS																			
SCENERY RATING: VERY HIGH	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
DIC RATING: HIGH	AD-1-E	AD-1-MF	E-3-E	E-3-D	AD-1-MF	E-3-E	AD-1-E	E-3-D	E-3-E	E-3-D	E-3-D	E-3-E	AD-1-MF	E-3-D	E-3-D	AD-1-E	E-3-E	E-3-D	E-3-E	E-3-D
TOTAL ACREAGE: 39,040																				
CLASSIF. AREA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	R	R	0	0
ACCESS: HIGHWAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ACCESS: GRAVEL RD.	2.23	1.56	0	0	3.47	0	11.72	0	0	0	0	0	5.06	0	0	7.81	0	0	0	0
ACCESS: TRAIL	0	0	0	0	0	3.13	3.91	0	3.91	0	0	0	0.07	0	0	0	0	0	7.81	0
DEV. REC. SITES	2.23	0	0	0	0	0	0	0	0	0	0	0	1.45	0	0	0	0	0	0	0
ARCH-HIST. SITES	0	0	0	0	0	0	0	0	0	0	0	0	1.30	0	0	0	0	0	0	0
PERENNIAL STRM	4.46	0	0	0.68	6.08	3.13	7.81	0	3.91	0	2.60	0	6.08	0	0.74	7.81	0	0	7.81	0
LAKES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VISUAL IMPACTS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AUDIAL IMPACTS	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
UNIQUE VEG.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UNIQUE ANIMALS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UNIQUE GEOL.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OUTSTAND. VIEWS	0	0	0	0	0	0	0	0	0	0	0	0	V	0	0	0	0	0	0	0
RLU ACREAGE	448	320	320	1472	576	320	128	1664	128	128	192	128	6912	896	1344	128	2560	704	64	512

CAPABILITY CLASS

SUITABILITY CLASS

- ○ MOST
- ⊕ MOD.
- ◍ LEAST

RECREATION TYPOLOGY	MOST	MOD.	LEAST
APPRECIATIVE SYMBOLIC	33728	5312	-0-
	-0-	30784	8256
EXTRACTIVE SYMBOLIC	9024	24704	5312
	19.136	19.904	-0-
SOCIABLE LEARNING	8832	29504	704
	9024	-0-	30.016
PASSIVE FREE PLAY	7808	26624	4608
	2112	-0-	36928
ACTIVE EXPRESSIVE	8000	26432	4608
	20.288	11.520	7232

ACREAGE TOTALS BY CAPABILITY AND SUITABILITY CLASSES

SUMMARY MATRIX

STUDY AREA ROCK CREEK | **SUBSECTION** CC-706-14 | **SHEET** 2 OF 3 | APPENDIX A

SCENERY RATING	RECREATIONAL LAND UNITS																			
	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
DIC RATING	F-3-H	F-3-P	F-1-H	F-3-P	F-3-P	F-3-H	F-3-P	F-3-H	F-3-P	F-3-H	F-3-P	F-3-H	F-3-P	F-3-H	F-3-P	F-3-H	F-3-P	F-3-H	F-3-P	AD-2-P
TOTAL ACREAGE																				
CLASSIF. AREA	R	R	O	R	R	O	R	O	R	R	R	R	R	R	R	R	O	O	O	O
ACCESS: HIGHWAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ACCESS: GRAVEL RD.	0	0	4.69	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.60
ACCESS: TRAIL	0	0.65	3.13	0	0	0	0.59	2.60	0.26	1.95	2.60	0.87	0	0	0	0	0	0	0.87	2.60
DEV. REC. SITES	0	0	3.13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARCH-HIST. SITES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PERENNIAL STRM	1.56	0.65	7.81	0	0.71	7.81	0.88	0	0.59	0	0	2.60	0	0	0.65	1.95	0	0	0.87	2.60
LAKES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VISUAL IMPACTS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AUDIAL IMPACTS	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
UNIQUE VEG.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UNIQUE ANIMALS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UNIQUE GEOL.	0	0	0	0	0	0	0	0	✓	0	0	0	0	0	0	0	0	0	0	0
OUTSTAND. VIEWS	0	0	0	0	0	0	0	0	✓	0	0	0	0	0	0	0	0	0	0	0
RLU ACREAGE	320	768	320	704	1408	64	5120	192	7680	256	384	5110	192	192	768	256	192	448	576	192
RECREATION TYPE: APPRECIATIVE SYMBOLIC																				
RECREATION TYPE: EXTRACTIVE SYMBOLIC																				
RECREATION TYPE: SOCIABLE LEARNING																				
RECREATION TYPE: PASSIVE FREE PLAY																				
RECREATION TYPE: ACTIVE EXPRESSIVE																				

CAPABILITY CLASS

SUITABILITY CLASS

- ○ MOST
- ⊕ MOD.
- ◍ LEAST

ACREAGE TOTALS BY CAPABILITY AND SUITABILITY CLASSES

SUMMARY MATRIX

STUDY AREA ROCK CREEK | **SUBSECTION** 6C-76E-12 | **SHEET** 3OF3 | APPENDIX A

	RECREATIONAL LAND UNITS	
SCENERY RATING	4	4Z
DIC RATING	II-3-H	II-3-O
TOTAL ACREAGE		
CLASSIF. AREA	0	0
ACCESS: HIGHWAY	0	0
ACCESS: GRAVEL RD.	0	0
ACCESS: TRAIL	0.46	0
DEV. REC. SITES	0	0
ARCH-HIST. SITES	0	0
PERENNIAL STRM	0	0
LAKES	0	0
VISUAL IMPACTS	0	0
AUDIAL IMPACTS	M	M
UNIQUE VEG.	0	0
UNIQUE ANIMALS	0	0
UNIQUE GEOL.	0	0
OUTSTAND. VIEWS	0	✓
RLU ACREAGE	1080	704

CAPABILITY CLASS

SUITABILITY CLASS
- ○ MOST
- ⊕ MOD.
- ◍ LEAST

ACREAGE TOTALS BY CAPABILITY AND SUITABILITY CLASSES

RECREATION TYPOLOGY
- APPRECIATIVE SYMBOLIC
- EXTRACTIVE SYMBOLIC
- SOCIABLE LEARNING
- PASSIVE FREE PLAY
- ACTIVE EXPRESSIVE

SUMMARY MATRIX

STUDY AREA ROCK CREEK | **SUBSECTION** C-7DE-15 | **SHEET** 10=2 | APPENDIX A

SCENERY RATING: HIGH

DIC RATING: AVERAGE

TOTAL ACREAGE: C. 504

CLASSIF. AREA

ACCESS: HIGHWAY; GRAVEL RD.; TRAIL

DEV. REC. SITES

ARCH-HIST. SITES

PERENNIAL STRM

LAKES

VISUAL IMPACTS

AUDIAL IMPACTS

UNIQUE VEG.

UNIQUE ANIMALS

UNIQUE GEOL.

OUTSTAND. VIEWS

RLU ACREAGE

RECREATIONAL LAND UNITS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
DIC RATING	AD-1-F	E-3-P	E-3-F	R-2-F	E-3-P	R-2-F	E-3-F	R-2-P	E-3-P	E-3-F	E-3-P	G-3-AP	E-3-F	E-3-P	G-3-AP	E-3-P	E-3-F	R-2-F	E-2-P	R-2-F
CLASSIF. AREA	R	R	R	R	R	B	R	B	B	R	R	R	R	R	R	B	R	B	O	R
HIGHWAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GRAVEL RD.	0	0	0	0	0	2.60	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TRAIL	9.77	0.95	0	0	0	0.87	1.64	0	0.49	0.16	0	0.92	0.17	0.51	0.60	0.27	0	1.54	0	2.23
DEV. REC. SITES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARCH-HIST. SITES	0	0	0	0	0	0	0	0	0	0	0	0	0.31	0	0	0	0	0	0	0
PERENNIAL STRM	9.77	0.59	0	0	0	0	0.41	0	0.16	0.70	0.28	0	0.34	1.42	0	0.13	1.16	0	0	0
LAKES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VISUAL IMPACTS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AUDIAL IMPACTS	0	0	0	M	M	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UNIQUE VEG.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UNIQUE ANIMALS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UNIQUE GEOL.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OUTSTAND. VIEWS	0	0	0	✓	0	✓	0	✓	0	0	0	✓	0	0	✓	0	0	✓	0	✓
RLU ACREAGE	51C	6720	760	320	1000	576	1216	1000	3072	6400	1920	3840	3840	1280	1920	1280	3840	1664	896	1408

CAPABILITY CLASS

SUITABILITY CLASS

- ○ MOST
- ⊕ MOD.
- ◍ LEAST

ACREAGE TOTALS BY CAPABILITY AND SUITABILITY CLASSES

RECREATION TYPOLOGY	○ MOST	⊕ MOD.	◍ LEAST
APPRECIATIVE SYMBOLIC	36032	25472	- 0 -
	46656	14848	- 0 -
EXTRACTIVE SYMBOLIC	10227	23040	25472
	38912	22592	- 0 -
SOCIABLE LEARNING	51C	5760	1000
	- 0 -	576	60928
PASSIVE FREE PLAY	- 0 -	26048	25472
	576	- 0 -	60928
ACTIVE EXPRESSIVE	2112	23552	23680
	42176	12432	38912

SUMMARY MATRIX

STUDY AREA	SUBSECTION	SHEET	APPENDIX
ROCK CREEK	WDE-15	1 OF 1	A

RECREATIONAL LAND UNITS

SCENERY RATING		
DIC RATING		
TOTAL ACREAGE		
CLASSIF. AREA	R	
ACCESS: HIGHWAY	0	
ACCESS: GRAVEL RD.	0	
ACCESS: TRAIL	0.63	
DEV. REC. SITES	0	
ARCH-HIST. SITES	0	
PERENNIAL STRM	0.11	
LAKES	0	
VISUAL IMPACTS	0	
AUDIAL IMPACTS	0	
UNIQUE VEG.	0	
UNIQUE ANIMALS	0	
UNIQUE GEOL.	0	
OUTSTAND. VIEWS	✓	
RLU ACREAGE	4736	

RECREATION TYPOLOGY

- APPRECIATIVE SYMBOLIC
- EXTRACTIVE SYMBOLIC
- SOCIABLE LEARNING
- PASSIVE FREE PLAY
- ACTIVE EXPRESSIVE

CAPABILITY CLASS

SUITABILITY CLASS

- ○ MOST
- ⊕ MOD.
- ◍ LEAST

ACREAGE TOTALS BY CAPABILITY AND SUITABILITY CLASSES

SUMMARY MATRIX

STUDY AREA: ROCK CREEK

SUBSECTION: 6C-705E-16

SHEET: 1 OF 2

APPENDIX A

	RECREATIONAL LAND UNITS																			
SCENERY RATING: LOW	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
DIC RATING: AVERAGE	E-3-P	E-3-MP	E-3-F	E-3-MF	R-2-MF	E-3-P	E-3-F	R-2-P	E-3-P	E-3-MF	R-2-MF	E-3-MF	E-3-F	E-3-P	E-3-F	R-2-F	R-2-P	R-2-AP	R-2-F	E-3-F
TOTAL ACREAGE: 23,016																				
CLASSIF. AREA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	BY
ACCESS: HIGHWAY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ACCESS: GRAVEL RD.	0	0	0	0	0	0	0	0	0	0	0	0	0	0.91	0	0	0	1.13	2.49	0.88
ACCESS: TRAIL	1.74	0.60	0	1.49	1.42	0	1.74	0	0	0	0	0	0	0	0	0	0	0	0.36	0
DEV. REC. SITES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ARCH-HIST. SITES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.29
PERENNIAL STRM	1.74	1.20	0	0.74	0	0	1.74	0	1.17	0.82	0	2.13	0.87	0.66	0.56	0	0	0	0	0
LAKES	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VISUAL IMPACTS	0	M	0	S	0	0	0	0	0	S	S	S	0	0	0	0	0	0	0	0
AUDIAL IMPACTS	S	S	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UNIQUE VEG.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UNIQUE ANIMALS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
UNIQUE GEOL.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OUTSTAND. VIEWS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	V	0	0
RLU ACREAGE	576	832	320	1344	704	512	576	256	1280	1216	704	704	1728	896	896	704	384	448	1408	1792

CAPABILITY CLASS

SUITABILITY CLASS
- ○ MOST
- ⊕ MOD.
- ◍ LEAST

ACREAGE TOTALS BY CAPABILITY AND SUITABILITY CLASSES

RECREATION TYPOLOGY	○	⊕	◍
APPRECIATIVE SYMBOLIC	13440	10176	-0-
EXTRACTIVE SYMBOLIC	-0-	12480	11136
SOCIABLE LEARNING	4864	11840	6912
PASSIVE FREE PLAY	10240	13376	-0-
ACTIVE EXPRESSIVE	256	6912	4608
	256	10624	12736
	256	13888	9472
	-0-	10880	12736
	2304	11520	6912
	13568	6080	3968

SUMMARY MATRIX

STUDY AREA	SUBSECTION	SHEET	APPENDIX
ROCK CREEK	6J-76E-16	2 OF 2	A

RECREATIONAL LAND UNITS

SCENERY RATING		
DIC RATING	AD-1-P	
TOTAL ACREAGE		
CLASSIF. AREA		0
ACCESS	HIGHWAY	0
	GRAVEL RD.	9.77
	TRAIL	0
DEV. REC. SITES		0
ARCH-HIST. SITES		0
PERENNIAL STRM		9.77
LAKES		0
VISUAL IMPACTS		0
AUDIAL IMPACTS		0
UNIQUE VEG.		0
UNIQUE ANIMALS		0
UNIQUE GEOL.		0
OUTSTAND. VIEWS		0
RLU ACREAGE		NSO
RECREATION TYPE/OBJ	APPRECIATIVE SYMBOLIC	
	EXTRACTIVE SYMBOLIC	
	SOCIABLE LEARNING	
	PASSIVE FREE PLAY	
	ACTIVE EXPRESSIVE	

CAPABILITY CLASS

SUITABILITY CLASS

- ○ MOST
- ⊕ MOD.
- ● LEAST

ACREAGE TOTALS BY CAPABILITY AND SUITABILITY CLASSES

APPENDIX B

SUITABILITY DATA SHEETS

APPENDIX B
SUITABILITY DATA SHEETS

SUBSECTION GC-76E-01

MEASURED VALUE

CALCULATED INDEX

RLU	ACCESS (MILES) HIGHWAY	GRAVEL RD	TRAIL	DEVEL. SITES (EA) RECREA.	ARCH. HIST.	MILES OF PERENNIAL STREAM	ACRES OF LAKE
1	3		3 9.33			3 9.38	
2			1 1.49			1 0.74	
3			1 2.40			2 2.40	3 3.01
4			5 2.06			7 1.33	
5			10 5.55			1.5 2.93	
6						2 0.11	129 0.95
7						2.5 0.91	6 2.18
8		3 0.21				5 0.64	
9		1.5 2.31				1.5 7.31	
10		2 0.16	18.5 1.51			24.5 2.00	124 10.14
11			3 1.34				
12							
13		3 7.81	7 0.53		1 2.40	3.5 9.11	
14		1 0.03	5.5 1.10			2 0.15	2 0.15
15		1.5 0.30				10 1.00	
16			1 0.33			2.5 0.83	2 0.60
17						1.3 0.50	
18	3	0.5 1.47	3 2.40			2.3 4.23	
19		1.8 1.54					

APPENDIX B
SUITABILITY DATA SHEETS

SUBSECTION 60-76E-02

MEASURED VALUE

CALCULATED INDEX

RLU	ACCESS (MILES)			DEVEL. SITES (EA)		MILES OF PERENNIAL STREAM	ACRES OF LAKE
	HIGHWAY	GRAVEL RD	TRAIL	ROCKIA.	ARCH. HIST.		
1			4 12.50			4 12.50	4 0.04
2			0.5 0.23			1.5 0.37	
3			1 0.17			4 0.04	
4			0.5 0.12			0.5 0.16	

APPENDIX B
SUITABILITY DATA SHEETS

SUBSECTION 6C - 76E - 03

MEASURED VALUE

CALCULATED INDEX

RLU	ACCESS (MILES)			DEVEL. SITES (EA)			
	HIGHWAY	GRAVEL RD	TRAIL	RECREA.	ARCH. HIST.	MILES OF PERENNIAL STREAM	ACRES OF LAKE
1		1.5 7.81				1.5 7.81	
2		6 2.10	0.5 3.20			7.5 5.00	
3		2 3.91				2 3.91	
4		2.5 0.03	1.5 1.17			20 0.62	10 0.31
5			2 1.56			5 7.81	
6			3 4.69			1.5 0.27	
7			1.5 0.27			6 4.06	24 17.05
8			3.5 2.49				
9		2 1.64	1 0.82				
10		0.5 1.30					
11			0.5 1.12			1 2.23	72 16.71
12		0.5 1.56	1 5.12				
13							
14			0.5 0.14				
15							
16							
17		1.5 1.56	0.5 0.52			2 2.08	
18							
19							

APPENDIX B
SUITABILITY DATA SHEETS

SUBSECTION 60-76E-04

MEASURED VALUE

CALCULATED INDEX

RLU	ACCESS (MILES) HIGHWAY	GRAVEL RD	TRAIL	DEVEL. SITES (EA) RECREA.	ARCH. HIST.	MILES OF PERENNIAL STREAM	ACRES OF LAKE
1		15 1.74		1 0.13		125 3.87	
2		10 F.04		1 0.50		9 2.54	
3		0.5 0.100				7 3.41	1 1.20
4		1 5.21					
5		0.5 0.27		1 0.01		0.5 0.11	
6						1 0.19	3 0.56
7							
8			1 0.25			2 0.50	
9						0.5 0.23	
10		1 0.73					2 1.56
11		3 0.43				1 0.14	
12		1.5 2.42				1 1.95	
13		0.5 1.23	0.5 1.95			2 7.81	
14			4.5 0.51			0.5 0.06	
15		0.5 1.50					
16			3 1.14			6 1.09	23 2.57
17			0.5 1.95			1 3.91	
18			1.5 0.34			2 3.13	
19							
20		2 1.30				2 1.30	
21						1 15.60	
22							
23							
24							
25						1 5.21	
26		1 5.21					
27							
28			4 0.71			1 0.18	
29		1 1.04	0.5 0.52				
30		2.5 3.00					4 4.81
31		0.5 0.52					
32						1 5.21	

APPENDIX B
SUITABILITY DATA SHEETS

SUBSECTION GC-7GE-04

MEASURED VALUE
CALCULATED INDEX

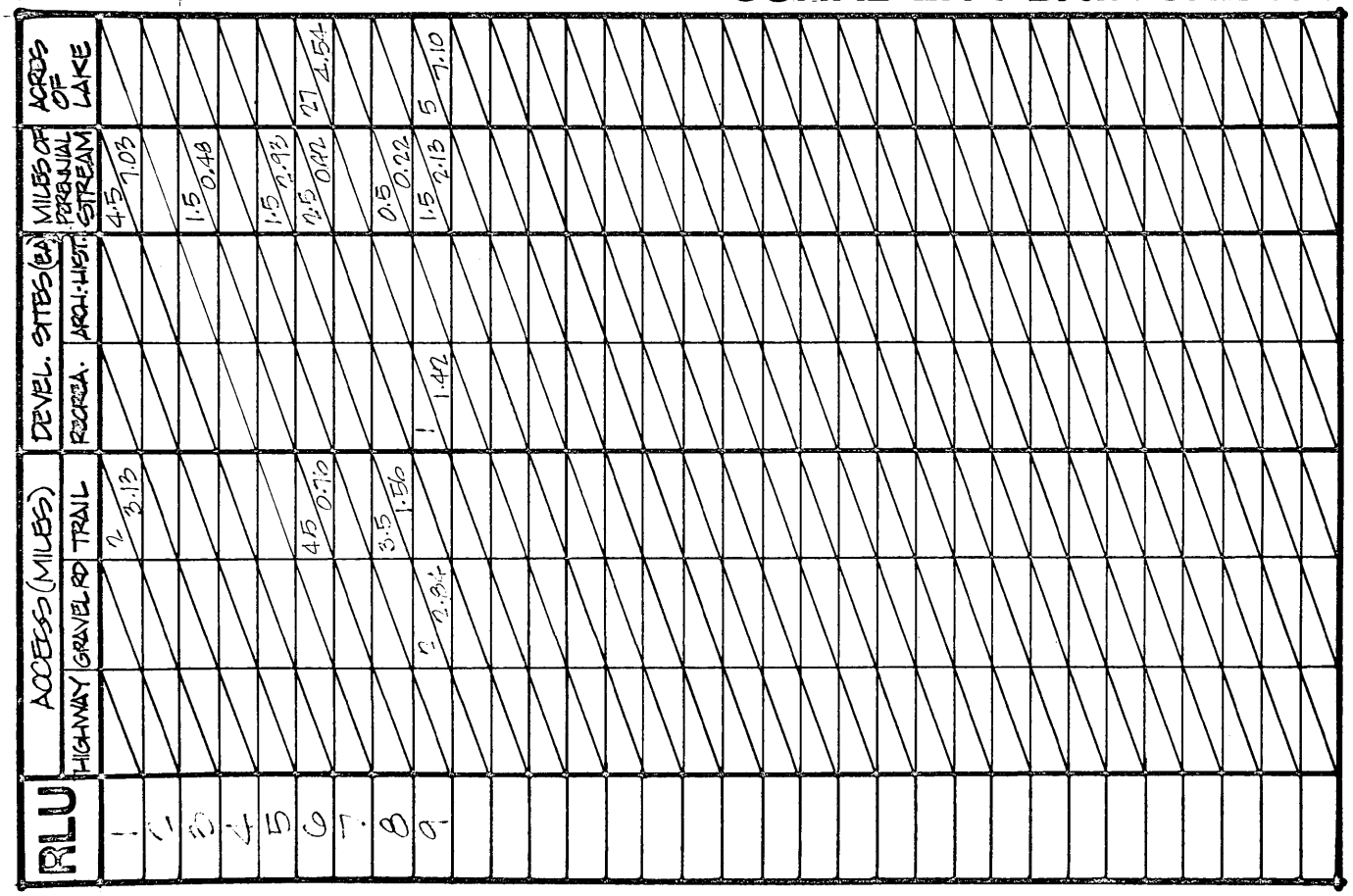
RLU	ACCESS (MILES)			DEVEL. SITES (EA)		MILES OF PERENNIAL STREAM	ACRES OF LAKE
	HIGHWAY	GRAVEL RD	TRAIL	ROCREA.	ARCH. HIST.		
33		0.5 0.10	3 0.58				
34						3 1.83	12 7.5
35							
36						0.5 0.49	
37		0.5 0.105					
38		0.5 1.95				0.5 1.95	
39		1 1.74		1 1.74		4.5 7.81	
40		3 3.35		1 1.12		0.5 0.50	20 12.32
41							
42		7 12.78					14 4.50
43							
44							
45							
46							
47						0.5 1.95	
48		2 7.91				2 7.81	
49		0.5 0.183				1.5 1.80	1 1.20
50		1 1.12					
51		0.5 0.50					
52							
53		3 0.91					
54							
55		5.5 1.52					
56							
57							
58							5 9.77
59		3 4.96	0.5 0.71	1 1.42		1.5 7.15	500 7.022

SUBSECTION 6C-76E-05

MEASURED VALUE

CALCULATED INDEX

APPENDIX B
SUITABILITY DATA SHEETS

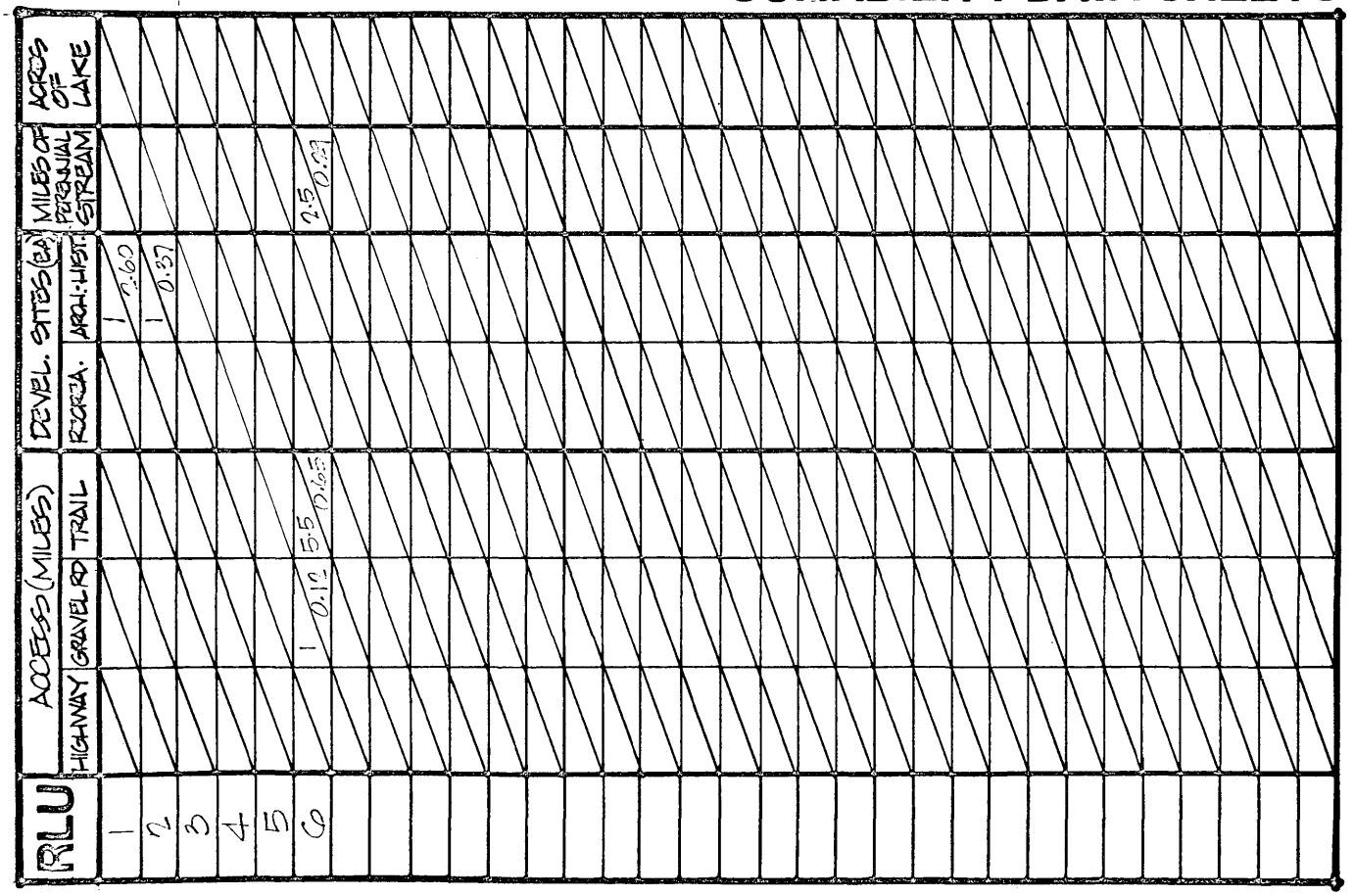


SUBSECTION 6C-76E-06

MEASURED VALUE

CALCULATED INDEX

APPENDIX B
SUITABILITY DATA SHEETS

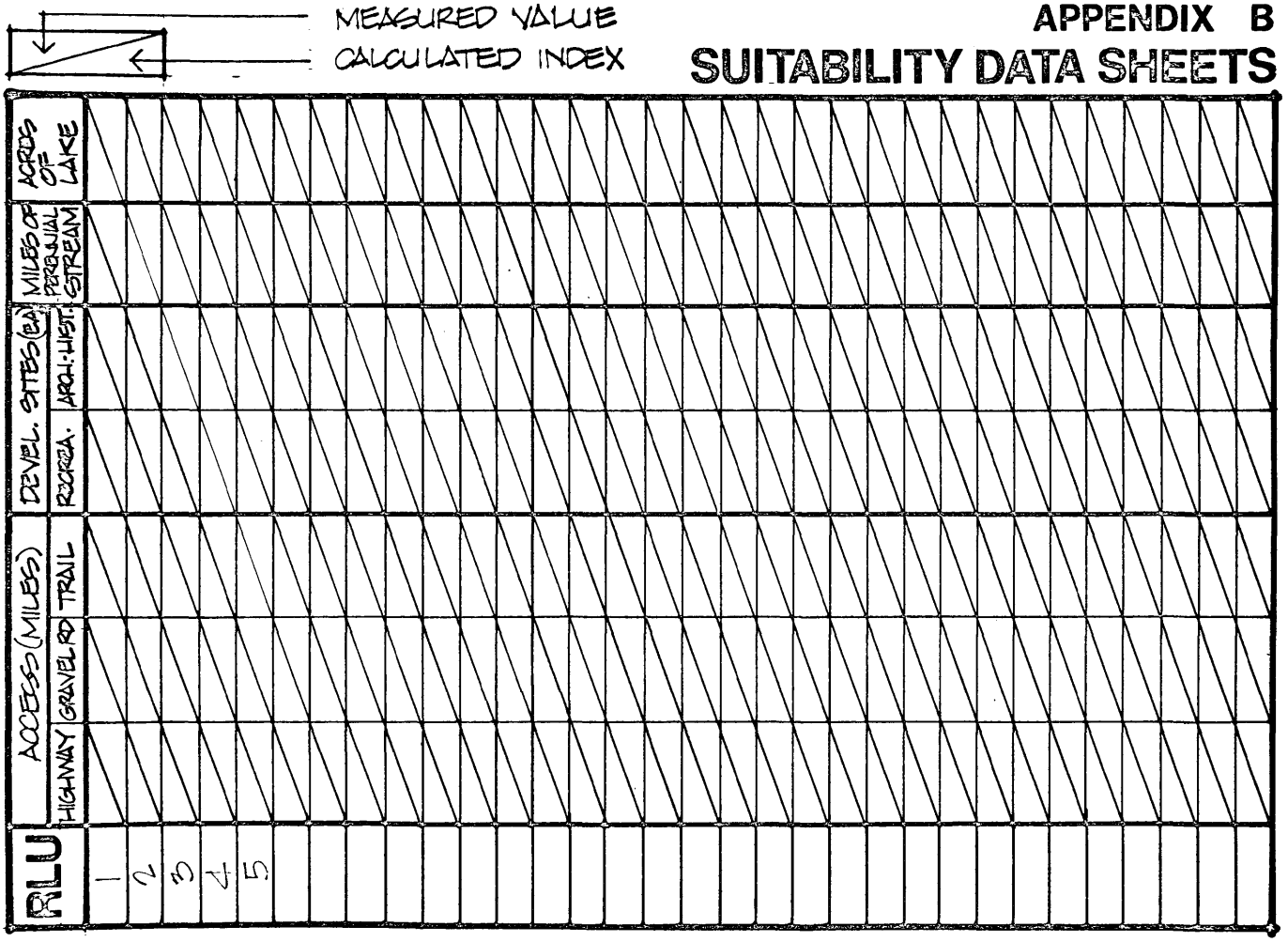


APPENDIX B
SUITABILITY DATA SHEETS

SUBSECTION 6C-76E-07

MEASURED VALUE

CALCULATED INDEX

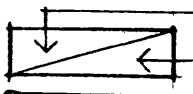


APPENDIX B
SUITABILITY DATA SHEETS

SUBSECTION 6C-76E-08

MEASURED VALUE

CALCULATED INDEX



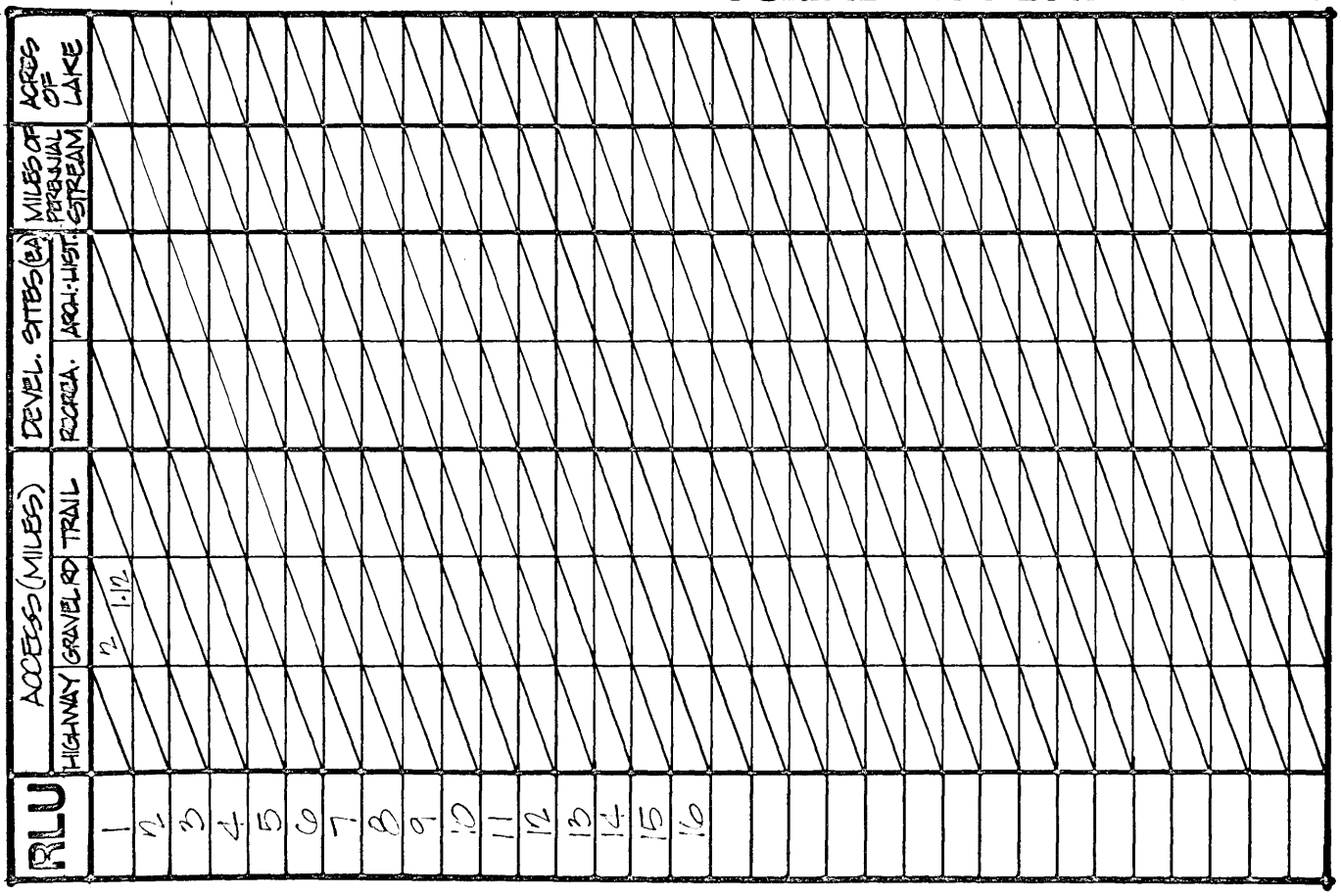
RLU	ACCESS (MILES)			DEVEL. SITES (EA)		MILES OF PERENNIAL STREAM	ACRES OF LAKE
	HIGHWAY	GRAVEL RD	TRAIL	RECREA.	ARCH. HIST.		
1						1.5 2.13	
2							
3							
4							
5						2.5 3.44	
6							
7							
8						3.5 4.88	
9						0.5 0.20	
10							
11							
12						0.5 0.56	
13						0.5 0.22	
14							
15						1 0.63	
16		1.5 2.5				0.5 0.08	

SUBSECTION 6C-76E-09

MEASURED VALUE

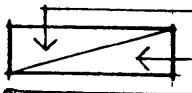
CALCULATED INDEX

APPENDIX B
SUITABILITY DATA SHEETS



APPENDIX B
SUITABILITY DATA SHEETS

SUBSECTION 6C-76E-10



MEASURED VALUE

CALCULATED INDEX

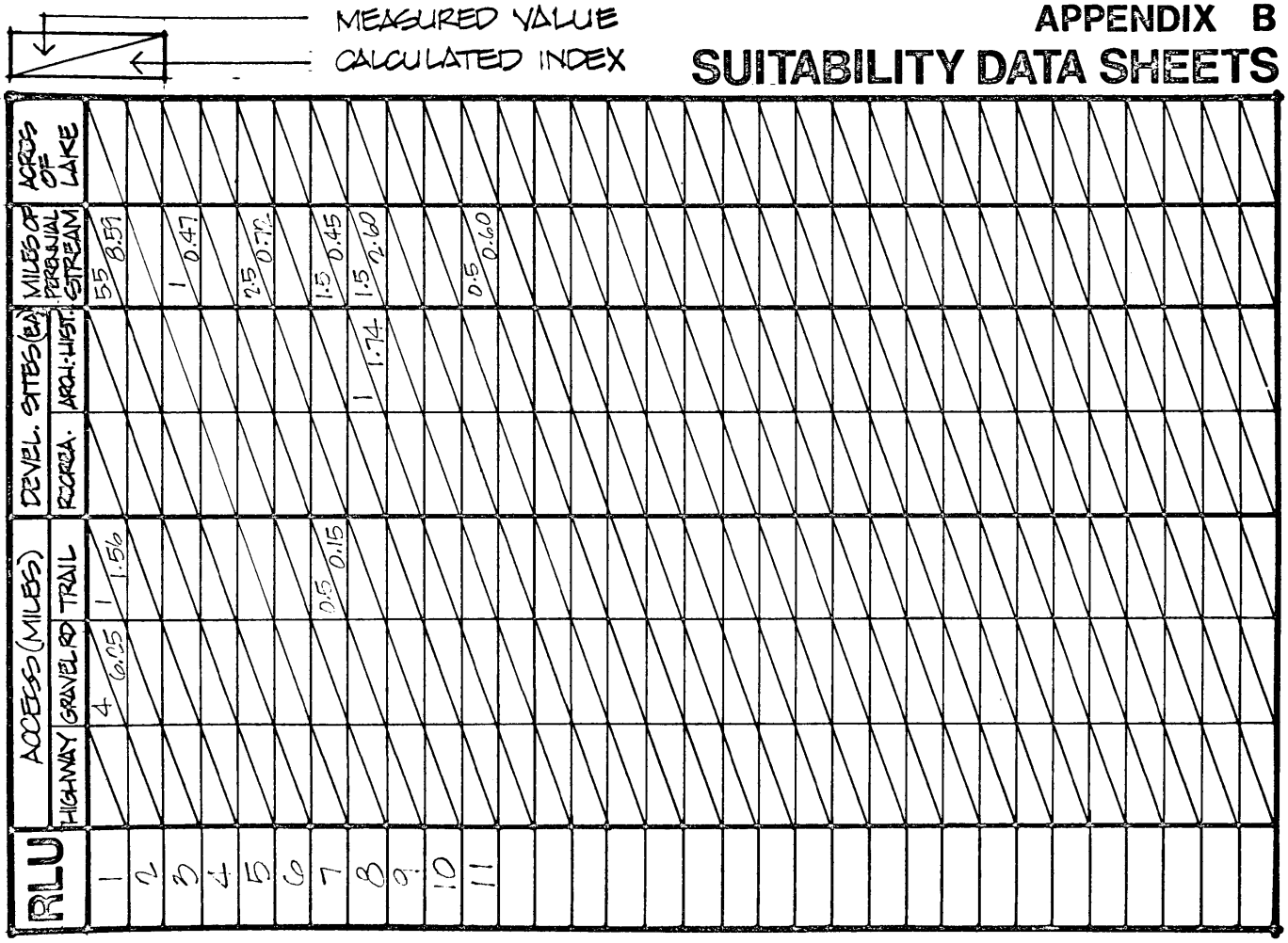
RLU	ACCESS (MILES)			DEVEL. SITES (EA)		MILES OF PERENNIAL STREAM	ACRES OF LAKE
	HIGHWAY	GRAVEL RD	TRAIL	RECREA.	ARCH-HIST.		
1		6 4.46				7 5.21	
2		6.5 3.18				7.5 3.18	
3						1.5 0.85	
4							
5							
6							
7						0.5 0.18	
8		2.5 0.10				11 0.44	
9						1.5 1.33	
10							3 4.26
11							
12		0.5 0.14				1 0.49	
13							
14							
15		1 0.74					
16		2 1.25				2 1.42	
17						0.5 0.18	
18							

APPENDIX B
SUITABILITY DATA SHEETS

SUBSECTION 6C-76E-11

MEASURED VALUE

CALCULATED INDEX

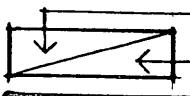


APPENDIX B
SUITABILITY DATA SHEETS

SUBSECTION 6C-76E-12

MEASURED VALUE

CALCULATED INDEX



RLU	ACCESS (MILES)			DEVEL. SITES (EA)		MILES OF PERENNIAL STREAM	ACRES OF LAKE
	HIGHWAY	GRAVEL RD	TRAIL	ROCKDA.	ARCH-HIST.		
1			0.5 0.24			3 1.46	
2						1.5 1.12	
3			7 1.42		1 0.20	3 0.61	
4						2.5 3.26	
5			1 0.68				

APPENDIX B
SUITABILITY DATA SHEETS

SUBSECTION 6C-76E-13

MEASURED VALUE

CALCULATED INDEX

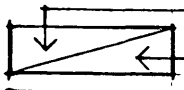
RLU	ACCESS (MILES)			DEVEL. SITES (EA)		MILES OF PERENNIAL STREAM	ACRES OF LAKE
	HIGHWAY	GRAVEL RD	TRAIL	RECREA.	ARCH. HIST.		
1						1 7.81	6 46.87
2						1 0.47	
3						3 0.90	
4							
5							
6							
7			1 1.42				
8						3 0.62	
9						3.5 2.10	
10			1.5 0.69			0.5 0.23	
11							
12						1.5 1.12	
13			2.5 0.82				
14			7 2.43				
15			6 0.49			10 0.81	
16			3 0.79		1 0.26	4.5 1.19	
17							
18			1 0.87				
19			0.5 0.78				
20			2 0.55			1.5 0.39	
21							
22						1.5 2.93	
23			0.5 1.56				
24			2 2.23				
25			1 0.87				
26						1 1.20	
27							
28							
29						0.5 1.12	
30					1 0.32	4.5 1.50	
31						0.5 0.42	
32							

APPENDIX B
SUITABILITY DATA SHEETS

SUBSECTION 6C-76E-13

MEASURED VALUE

CALCULATED INDEX



RLU	ACCESS (MILES)			DEVEL. SITES (#)		MILES OF PERENNIAL STREAM	ACRES OF LAKE
	HIGHWAY	GRAVEL RD	TRAIL	RECREA.	ARCH-HIST		
33					1	2.5	
34					0.40	1.50	
35						1.5	
36						1.38	

APPENDIX B
SUITABILITY DATA SHEETS

SUBSECTION 6C-76E-14

MEASURED VALUE

CALCULATED INDEX

RLU	ACCESS (MILES)			DEVEL. SITES (#)		MILES OF PERENNIAL STREAM	ACRES OF LAKE
	HIGHWAY	GRAVEL RD	TRAIL	RECREA.	ARCH. HIST.		
1	1 2.23	1 2.23		1 2.23		2 4.46	
2	0.5 1.56	0.5 1.56			1 3.13		
3							
4						1 0.63	
5		2 3.47				3.5 6.06	
6			1 3.13			1 3.13	
7		1.5 1.72	0.5 3.91			1 7.81	
8							
9			0.5 3.91			0.5 3.91	
10							
11						0.5 2.60	
12							
13		2.5 5.06	0.5 0.07	10 1.45	9 1.30	4.2 (0.03)	
14							
15						1 0.74	
16		1 7.81				1 7.81	
17							
18							
19			0.5 7.81			0.5 7.81	
20							
21						0.5 1.56	
22			0.5 0.65			0.5 0.65	
23		1.5 4.69	1 3.13	1 3.13		2.5 7.81	
24							
25						1 0.71	
26						0.5 7.81	
27			3 0.57			4.5 0.57	
28			0.5 2.60				
29			2 0.26			4.5 0.57	
30			0.5 1.95				
31			1 7.10			1.5 0.10	
32			0.5 0.97				

APPENDIX B
SUITABILITY DATA SHEETS

SUBSECTION GC-76E-14

MEASURED VALUE

CALCULATED INDEX

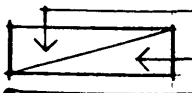
RLU	ACCESS (MILES)			DEVEL. SITES (EA)		MILES OF PERENNIAL STREAM	ACRES OF LAKE
	HIGHWAY	GRAVEL RD	TRAIL	RECREA.	ARCH. HIST.		
33							
34							
35						0.5 / 0.65	
36						0.5 / 1.95	
37							
38							
39			0.5 / 0.67			0.5 / 0.87	
40		0.5 / 2.60	0.5 / 2.60			0.5 / 2.60	
41		0.5 / 2.60	0.5 / 0.46				
42							

APPENDIX B
SUITABILITY DATA SHEETS

SUBSECTION 6C-76E-15

MEASURED VALUE

CALCULATED INDEX



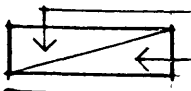
RLU	ACCESS (MILES)			DEVEL. SITES (EA)		MILES OF PERENNIAL STREAM	ACRES OF LAKE
	HIGHWAY	GRAVEL RD	TRAIL	RECREA.	ARCH. HIST.		
1			5 9.77			5 9.77	
2			4 0.95			2.5 0.59	
3							
4							
5							
6		1.5 2.60	0.5 0.87				
7			2 1.64			0.5 0.41	
8							
9			1.5 0.44			0.5 0.16	
10			1 0.16			4.5 0.70	
11						0.5 0.23	
12			3 0.92				
13			1.5 0.17		1 0.31	3 0.34	
14			2.5 0.51			7 1.42	
15			0.5 0.60				
16			2 2.27			1 0.13	
17						4 1.16	
18			7 1.54				
19							
20			1 2.23				
21			3 0.63			0.5 0.11	

APPENDIX B
SUITABILITY DATA SHEETS

SUBSECTION 6C-76E-16

MEASURED VALUE

CALCULATED INDEX



RLU	ACCESS (MILES) HIGHWAY	GRAVEL RD	TRAIL	DEVEL. SITES (EA) RECREA.	ARCH-HIST.	MILES OF PERENNIAL STREAM	ACRES OF LAKE
1			1 1.74			1 1.74	
2			0.5 0.60			1 1.20	
3							
4			2 1.49			1 0.74	
5			1 1.42				
6							
7			1 1.74			1 1.74	
8							
9						1.5 1.17	
10						1 0.80	
11							
12						1.5 2.13	
13						1.5 0.87	
14		1 0.19				3.5 0.45	
15						0.5 0.14	
16							
17							
18		0.5 1.12					
19		3.5 2.44	0.5 0.36				
20		3 0.82			1 0.43		
21		2.5 9.77				2.5 9.77	

APPENDIX C

CULTURAL DATA DESCRIPTIONS

I. GEOLOGICAL AREA

1. Welcome Creek - Placer Gold Mines
2. Sapphire Gulch - Sapphire Area
3. Squaw Rock - Formation, Legend, Nesting and Lambing Area
4. Multicolored Rock Cliffs
5. Congdon Creek Falls

II. HISTORIC AND ARCHEOLOGICAL AREA

1. Indians Peeled Bark from Trees on Hill at Mouth of Creek
2. Ruins of Alps Mine, Superintendent's House
3. Location of Indian Fish Traps
4. Quigley Townsite (1865) - Mine Town Founded on Salted Mine
5. Ruins of Alps Mine and Quigley Wagon Road (1896)
6. Ruins of Mine on Welcome Creek, Largest Gold Nugget Found on Creek in Montana
7. Indian Rock Piles (40+)
8. Indian Campsite on Alder Creek
9. Buffalo Graveyard - 100+ Perished Here One Winter
10. Robbers Graves

11. Ranch Used as Rustler Hideout
12. Burnt Fork Indian Trail
13. Indian Tepee Rings (3)
14. (See MU Plan - Missoula District)
15. Wyman Ranch (1888)
16. Indian Campsites
17. Indian Campsite and Artifacts
18. Maukey Massacre Site
19. Old Waterwheel

III. DEVELOPED RECREATION SITES

1. Norton Picnic Area
2. Grizzly Campground
3. Welcome Bridge Area
4. Dalles Campground
5. Harry's Flat Campground
6. Bitterroot Flat Campground
7. Cougar Creek Campground
8. Hutsinpilar Campground
9. Camp Siria
10. Bighorn Campground
11. Squaw Rock Campground
12. American Gem Private Camp and a Store
13. Flume Crossing Campground
14. Crystal Creek Campground
15. Copper Creek Campground
16. Moose Lake Lodge and Cabins
17. Spillway Campground
18. East Fork Rock Creek Campground
19. Stage Station Campground and Store (Private)

IV. VIEWPOINTS

1. Sliderock Lookout
2. Cinnamon Bear Point
3. East Quigg Peak
4. Green Mountain
5. Emerine Lookout
6. Cutaway Pass
7. Pintlar Pass
8. Bitterroot Pass
9. Big Hogback Ridge
10. Black Pine
11. Spring Creek Overlook
12. East Fork Overlook
13. East Fork Reservoir Overlook
14. Carp Creek
15. Warren Peak
16. Copper Creek Overlook

V. BOTANICAL AREA

1. Possible Unique True Alpine Habitat Type

VI. ZOOLOGICAL AREAS

1. Threatened Species - Arctic Grayling, Fuse Lake
2. Possible Unique Frog Species, Stony Lake Area Only
3. Possible Unique Salamander Breeding Area

APPENDIX D

GLOSSARY OF TERMS

Active Expressive Recreation - Activities which express individual abilities; frequently involving motorized equipment.

Alluvial Deposit - A subcomponent of the landform component resulting from deposition by recent or ancient rivers and streams, and some glaciofluvial deposits.

Alpine Parkland - A subcomponent of the vegetation component consisting of open stands of trees with a crown cover of from 0 to 60%; normally found at high elevation in the alpine and subalpine zones.

Appreciative Symbolic Recreation - Activities directed toward appreciation of features of the natural environment.

Audial Impacts - Sounds which have a potentially disturbing influence on the enjoyment of recreational activities.

Capability - Refers to the physical ability of the land to support various recreational activities based upon an analysis of the components of the land.

Development Impact Capacity (DIC) - The inherent capacity of various landscape types to visually absorb resource development.

Extractive Symbolic Recreation - Activities characterized by the quest for trophies extracted from the natural environment.

Fluvial Lands - A subcomponent of the landform component where erosion by water is generally the dominant landforming process.

Forest - A subcomponent of the vegetation component; includes all areas with a crown cover greater than 60%.

Glacial Deposit - A subcomponent of the landform component; a unit of land created by the erosion and deposition action of a glacier.

Glaciated Upland - A subcomponent of the landform component; those areas that have been scoured by glacial action.

Grassland - A subcomponent of the vegetation component; includes areas which are naturally covered by grasses and have a vegetative crown cover of less than 10%.

Index of Relative Density - An indication of the intensity of a particular natural or cultural feature within a Recreational Land Unit.

Modified Forest - A subcomponent of the vegetation component which would otherwise meet the criteria for forest, but has been modified by man.

Modified Parkland - A subcomponent of the vegetation component which would otherwise meet the criteria for parkland, but has been modified by man.

Parkland - A subcomponent of the vegetation component consisting of open stands of trees with a crown cover of from 10 to 60% normally found at low elevations on south facing slopes.

Passive Free Play Recreation - Activities which require little effort in gaining satisfaction; recreationist's focus is on a change of pace atmosphere.

Recreational Land Unit - A unit of analysis which consists of the three components of the land as identified in this study: landform, slope and vegetation.

Recreation Typology - A conceptual grouping of activities based upon stated preferences of outdoor recreationists.

Rounded Ridge - A subcomponent of the landform component where frost action is the principal morphological agent.

Sociable Learning Recreation - Activities that are clearly social in nature, which depend upon developed facilities to provide the opportunity for interaction.

Subsection - The principal unit of analysis, an assemblage of similar landforms based upon the components of geology, physiography, and topography.

Suitability - Refers to the relative desirability of an area for various types of recreation based upon socio-cultural factors.

Visual Impacts - Potentially disturbing effects of cultural development based upon the amount of visual dominance they impose on the environment.